

Economic Impact of Aviation in North Dakota

2004 STATE AVIATION SYSTEM PLAN UPDATE

Prepared for the North Dakota Aeronautics Commission
by Flint Communications

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Table of Contents.....	1
<i>List of Tables.....</i>	<i>1</i>
<i>List of Figures.....</i>	<i>2</i>
Chapter 1: Introduction.....	3
<i>Section 1.1: Update of North Dakota's Economic Impact.....</i>	<i>3</i>
<i>Section 1.2: Summary of 2004 Findings.....</i>	<i>4</i>
Chapter 2: Study Methodology.....	7
<i>Section 2.1: Identifying the Groups to be Studied.....</i>	<i>7</i>
<i>Section 2.2: Sampling Procedures.....</i>	<i>9</i>
<i>Section 2.3: Data Extrapolation.....</i>	<i>11</i>
<i>Section 2.4: Induced Impact Multipliers.....</i>	<i>11</i>
Chapter 3: Statewide Impact of Market Segments.....	13
<i>Section 3.1: Commercial Air Service Tenants.....</i>	<i>13</i>
Subsection 3.1.1: Airlines.....	13
Subsection 3.1.2: Concessions.....	15
Subsection 3.1.3: Government/Military.....	17
Subsection 3.1.4: Air Freight.....	19
Subsection 3.1.5: Miscellaneous Tenants.....	20
<i>Section 3.2: General Aviation.....</i>	<i>22</i>
<i>Section 3.3: Ag Sprayers.....</i>	<i>30</i>
<i>Section 3.4: FBOs/Others.....</i>	<i>32</i>
<i>Section 3.5: Travel Agencies.....</i>	<i>34</i>
<i>Section 3.6: Hotels/Motels.....</i>	<i>36</i>
<i>Section 3.7: Air Travel Visitors.....</i>	<i>38</i>
Subsection 3.7.1: Commercial Service Air Travel Visitors.....	38
Subsection 3.7.2: General Aviation/Air Taxi Travel Visitors.....	40
<i>Section 3.8: Aviation Manufacturing.....</i>	<i>44</i>
Chapter 4: 2004 Aviation Impacts in Review.....	46
Appendix A: Commercial Service Airport Impact.....	48
Appendix B: North Dakota Air Passenger Survey.....	59
Appendix C: GA Community Wide Impacts.....	72

List of Tables

Table 1: Expenditure Summary for Aviation Economic Impact 1994, 1999, and 2004.....	5
Table 2: Employment Summary for Aviation Economic Impact 1994, 1999, and 2004.....	6
Table 3: Commercial Service Airport Activity Levels.....	8
Table 4: 2004 Survey Response Rates.....	10
Table 5: Sample Data Weighting Factors.....	11





Table 6: Multipliers.....	12
Table 7: Airlines Serving North Dakota in 1994, 1999, and 2004.....	13
Table 8: Airline Impacts 1994, 1999, and 2004.....	14
Table 9: Concessions Employment and Expenditures 1994, 1999, and 2004.....	15
Table 10: Concessions Impact 1994, 1999, and 2004.....	16
Table 11: Government/Military Employment and Expenditures 1994, 1999, and 2004.....	17
Table 12: Government/Military Impact 1994, 1999, and 2004.....	18
Table 13: Air Freight Impact 1994, 1999, 2004.....	19
Table 14: Miscellaneous Tenant Impact 1994, 1999, and 2004.....	21
Table 15: General Aviation Activity 1994, 1999, and 2004.....	23
Table 16: Airports Closed for Public Use in North Dakota.....	26
Table 17: At-Risk Public Airports in North Dakota.....	27
Table 18: GA Management Impact 1994, 1999, and 2004.....	29
Table 19: Ag Sprayers impact 1994, 1999, and 2004.....	31
Table 20: FBOs/Others Impact 1994, 1999, and 2004.....	33
Table 21: Travel Agency Impact 1994, 1999, and 2004.....	35
Table 22: Hotels/Motels Impact 1994, 1999, and 2004.....	37
Table 23: Passenger Survey Response.....	38
Table 24: Air Traveler Expenditures at Commercial Service Airports 1994, 1999, and 2004.....	39
Table 25: GA Public 90 Airport Visitor Direct Expenditures 2004.....	41
Table 25A: Public Airport Visitor Impact 1994, 1999, and 2004.....	43
Table A-1: 2004 Economic Impact Statewide.....	49
Table A-2: 2004 Economic Impact of Bismarck.....	50
Table A-3: 2004 Economic Impact of Devils Lake.....	51
Table A-4: 2004 Economic Impact of Dickinson.....	52
Table A-5: 2004 Economic Impact of Fargo.....	53
Table A-6: 2004 Economic Impact of Grand Forks.....	54
Table A-7: 2004 Economic Impact of Jamestown.....	55
Table A-8: 2004 Economic Impact of Minot.....	56
Table A-9: 2004 Economic Impact of Williston.....	57
Table A-10: 1994, 1999, and 2004 Economic Impact Statewide.....	58
Table C-1: 2004 GA Airport Community Wide Summary.....	70

List of Figures

Figure 1: Location of North Dakota's Public Use Airports.....	4
Figure 2: Aviation-Related Jobs and Payroll in North Dakota 1994, 1999, and 2004.....	6
Figure 3: Aerial Acres Sprayed.....	30





Welcome to the 2004 edition of the study of the economic impact of aviation on North Dakota's economy. This study provides a complete examination of aviation's economic impact on the state and updates similar economic impact and employment data gathered in 1994, 1999 and 2004. Economic activity associated with aviation in North Dakota provides jobs and expenditures related to aviation activities. This spending is then spread through local economies throughout the state, creating additional employment, tax revenue and spending.

Aviation spending is not limited to airports. Aviation contributes substantially to agricultural, medical, commercial and industrial growth throughout North Dakota. In addition, the presence of airports and the link air travel creates between North Dakota and the rest of the world substantially improves the lives of North Dakotans on a daily basis.

\$1,255,470,000 of expenditures in 2004
12,002 jobs in 2004

Section 1.1

Update of North Dakota's Economic Impact

Earlier versions of this study have been shown to be valuable tools in proving aviation's impact on, and contribution to, North Dakota's commercial and industrial growth. This current study was conducted to update the data gathered in past editions of this work and to reflect the nature of the economic impact of aviation in 2004. The data reveals that some market segments have experienced strong growth over the past five years while others have declined.

As in earlier studies, the 2004 Economic Impact Study defines economic impact as (1) employment, and (2) related expenditures attributed to aviation in North Dakota. In this study, expenditures are defined as gross sales, capital expenditures, operating expenses, and taxes. Employment is defined both in terms of number of employees and payroll expenditures.

Both employment and expenditure data include the direct costs and spending, as well as induced spending related to these direct costs.

- Direct economic impacts – Those benefits associated with groups or industries that rely on aviation for their livelihood. This includes (but is not limited to) airlines, agricultural aerial applicators, airport tenants (those businesses renting space on North Dakota airports), travel agencies, hotels/motels and others.
- Induced economic impacts – Those impacts generated from the direct impacts of employment and expenditures within a local or statewide economy. For example, part of an employee's salary (a direct economic impact) is used to purchase food, housing and other items. The recipient of this money then spends some of it again, creating a multiplier effect as successive waves of spending occur. In the same way, additional jobs are created as employees are hired to staff businesses benefiting from aviation's direct economic impact.

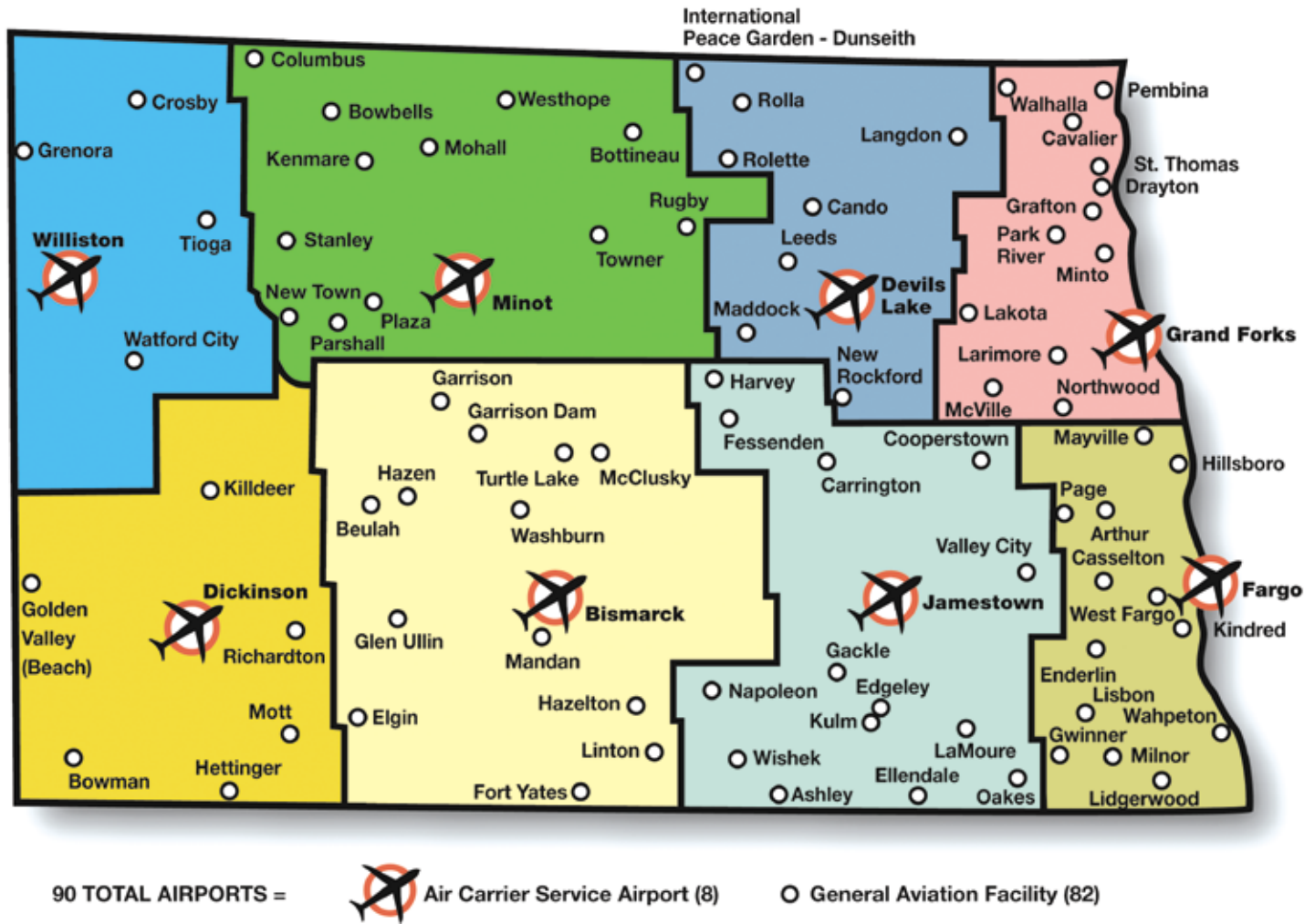
As in previous editions of this study, the Department of Agricultural Economics at North Dakota State University supplied these multipliers.





The following map identifies the locations of the airports serving North Dakota:

Figure 1
Location of North Dakota's Public Use Airports



Section 1.2

Summary of 2004 Findings

Table 1 identifies statewide direct and induced spending totals for the years 1994, 1999 and 2004. Note that some market segments have experienced strong growth in aviation-related spending while others have remained fairly stable or have declined. Overall, the growth in economic impact related to aviation in North Dakota over the past ten years has

been substantial. A healthy air transportation system helps employers recruit and retain highly skilled people, which in turn, contributes to the ability of North Dakota businesses to survive and thrive. A viable air system gives our state's citizens a way to travel the entire state, and even the world. Aviation expenditures increased 114% and jobs increased 37% over the last 10 years.



Table 1
Expenditure Summary for Aviation Economic Impact in North Dakota
1994, 1999, 2004

Expenditures (\$000)									
Group	1994			1999			2004		
	Direct	Induced ¹	Total	Direct	Induced ¹	Total	Direct	Induced ¹	Total
Commercial Tenants									
Airlines	\$12,374	\$18,621	\$30,995	\$8,417	\$12,625	\$21,043	\$10,681	\$16,072	\$26,753
Concessions	\$8,364	\$12,544	\$20,908	\$726	\$1,091	\$1,817	\$5,454	\$8,092	\$13,546
Gov't/Military	\$56,759	\$84,387	\$141,146	\$41,042	\$61,563	\$102,605	\$64,158	\$96,238	\$160,396
Air Freight	\$8,366	\$12,548	\$20,914	\$7,659	\$11,489	\$19,148	\$10,128	\$15,193	\$25,321
Miscellaneous	\$716	\$1,075	\$1,791	\$3,805	\$5,708	\$9,513	\$35,122	\$52,684	\$87,806
Tenants Total ²	\$86,579	\$129,175	\$215,754	\$61,649	\$92,476	\$154,126	\$125,543	\$188,279	\$313,822
GA Management	\$7,577	\$11,365	\$18,943	\$23,229	\$34,844	\$58,844	\$37,818	\$56,728	\$94,546
Ag Sprayers	\$18,218	\$27,941	\$46,159	\$9,356	\$14,034	\$23,390	\$32,991	\$49,487	\$82,478
FB0s/0thers	\$33,268 ³	\$49,902	\$83,170	\$15,548	\$23,322	\$38,870	\$23,278	\$34,918	\$58,196
Travel Agents	\$7,149	\$10,725	\$17,873	\$26,099	\$39,150	\$65,249	\$41,973	\$62,961	\$104,934
Hotels/Motels	\$2,477	\$3,715	\$6,192	\$1,062	\$1,593	\$2,655	\$1,803	\$2,706	\$4,509
Air Travel Visitors									
Comm. Service	\$67,978	\$101,967	\$169,945	\$127,343	\$191,015	\$318,359	\$178,387	\$267,582	\$445,969
GA/Air Taxi	\$10,556	\$15,834	\$26,390	\$8,256	\$12,384	\$20,640	\$13,081	\$19,622	\$32,703
Visitor Total ²	\$78,534	\$117,801	\$196,335	\$135,599	\$203,399	\$338,998	\$191,467	\$287,204	\$478,672
Av. Mftg. ⁴	-	-	-	-	-	-	\$47,325	\$70,988	\$118,313
Grand Total ²	\$233,802	\$350,624	\$584,426	\$272,542	\$408,818	\$682,132	\$502,198	\$753,271	\$1,255,470
									+114

¹ Induced expenditures = Direct x 1.5

³ Change in total expenditures

² Totals may not add up due to rounding

⁴ First year includes 2004 data



Table 2 shows employment figures related to these expenditures in the years 1994, 1999 and 2004.

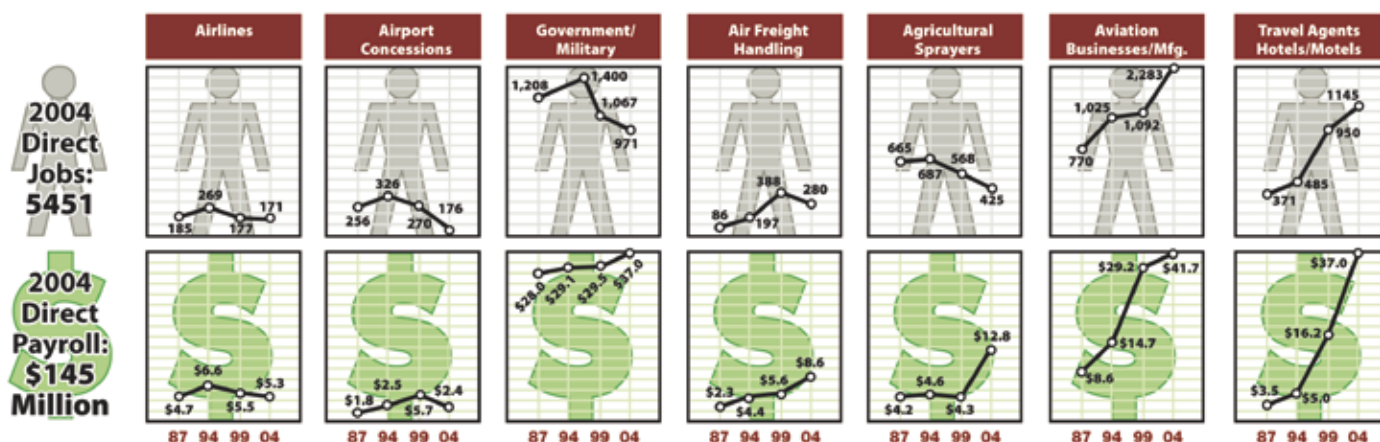
Table 2
Employment Summary

Employment Figures									
Group	1994			1999			2004		
	Direct	Induced	Total	Direct	Induced	Total	Direct	Induced	Total
Comm. Tenants									
Airlines	269	269	538	177	177	354	171	171	342
Concessions	326	326	652	270	270	540	176	176	352
Gov't/Military	1,364	1,364	2,728	1,067	1,067	2,134	844	844	1,688
Air Freight	197	197	394	388	388	776	280	280	560
Miscellaneous	33	33	66	76	76	152	919	919	1,838
Total Tenants¹	2,189	2,189	4,378	1,978	1,978	3,956	2,390	2,390	4,780
GA Management	78	78	156	134	134	268	127	127	254
Ag Sprayers	687	687	1,374	568	568	1,136	425	425	850
FB0s/0thers	914	914	1,828	582	582	1,164	739	739	1,478
Travel Agents	349	349	698	1,095	1,095	2,190	1,075	1,075	2,150
Hotels/Motels	136	136	272	52	52	104	70	70	140
Av. Mfrtg. ²	-	-	-	-	-	-	1,175	1,175	2,350
Grand Total	4,353	4,353	8,706	4,409	4,409	8,818	6,001	6,001	12,002

¹ Tenants at Big 8 airports (Bismarck, Devils Lake, Dickinson, Fargo, Grand Forks, Jamestown, Minot, Williston)

² New category for 2004 statistics

Figure 2
Aviation-Related Jobs and Payroll in North Dakota
1994, 1999, and 2004





Four steps were involved in developing the methodology for this economic impact study. These four steps were:

- Identifying the groups to be studied
- Sampling procedures for these groups
- Data tabulation and extrapolation
- Induced impact multipliers

Section 2.1 Identifying the Groups to be Studied

The groups included in this economic impact study and the estimated number of such companies in North Dakota are shown below. The number of companies was identified using information from the North Dakota Aeronautics Commission (NDAC), airport managers, aviation industry records, Job Service and Internet company profiles.

- Commercial Service Airport Tenants (157)
- General Aviation Management (82)
- Agricultural Sprayers (147)
- Fixed Base Operators (FBOs)/Others (63)
- Air Travel Visitors (290,798)
- Commercial Service Airports (8)
- Travel Agencies (31)
- Hotels/Motels (45)
- Aviation Manufacturing (12)

Details about each of these groups are shown on the next page.

- Commercial Service Airport Tenants – North Dakota has eight airports offering commercial air service. A summary of air travel service provided by each of these airports is shown in Table 3.





Table 3
Commercial Service Airport Activity Levels

Airport	1999		2004		% Change	
	Enplanements	(Total Operations)	Enplanements	(Total Operations)	Enplanements	(Total Operations)
Bismarck	127,812	56,064	159,963	55,164	+25	-2
Devils Lake	2,833	23,881	2,946	23,342	+4	-2
Dickinson	3,259	10,884	5,081	11,396	+56	+5
Fargo	221,369	95,842	256,004	75,753	+16	-21
Grand Forks	85,589	222,907	89,301	268,312	+4	+20
Jamestown	2,874	35,716	2,495	35,796	-13	0
Minot	71,547	35,550	74,085	38,473	+4	+8
Williston	5,441	19,800	6,144	22,760	+13	+15
State Total	520,994	500,644	596,019	530,996	+14	+6

Source: airport management records
Operations include not only commercial service operations but also general aviation and military operations

Tenants at these airports consist of at least one of the following:

- Airlines – Commercial air service airlines Northwest and Allegiant; a scheduled charter carrier and regional airline operators (Big Sky, Mesaba, United Express, Great Lakes and others).
- Concessions – Rental cars, food and beverage operations, gift and news stores, parking, airline concessions companies and others.
- Government/Military – Federal management, state agencies, FAA tower, TSA, weather services and National Guard units located on airport property.
- Air Freight – Federal Express, UPS, DHL and others.
- Miscellaneous Tenants – Business/corporate aviation, office and/or hangar rental, agricultural tenants and others.
- GA Management – There are 82 public use GA airports in North Dakota. Tenants at these airports are most often ag sprayers and FBOs who might also serve as the airport manager in the day-to-day operations of the airport. Included in the GA management analysis is spending related to the operating costs in managing a commercial airport facility.
- Ag Sprayers – Based on 2004 NDAC records, there are 147 ag sprayers registered in North Dakota. Most of these (64 percent) operate primarily as an ag sprayer, with the remainder involved in other FBO business activities.
- FBOs/Others – NDAC records identify a total of 63 FBOs across the state. These companies are involved in air taxi operations, avionics, airline dealerships, flight training, refueling, mechanics and FBO operations.
- Aviation Manufacturing - NDAC researched North Dakota Department of Commerce data base for 12 firms in the aerospace industry in North Dakota. First time inclusion of this industry for 2004 study resulted in 1175 direct jobs on and off airports.

(Tenants classified as ag sprayers or FBOs are grouped separately. Their employment and related expenditure figures are included in the summary of each airport's economic analysis.)





- **Air Travel Visitors** – Passengers using the eight commercial service airports in North Dakota were surveyed during the summer of 2004. Those identified as GA visitors to the state had their expenditures analyzed in this report. The economic impact of these visitors was derived from Aircraft Owners Pilot Association (AOPA) statistics and from FAA-related studies.
- **Travel Agencies** – According to NDAC information, there are 31 travel agencies serving the eight commercial service airports in North Dakota. Air travel industry included larger consolidator and work vacation tour operators.
- **Hotels/Motels** – There are 45 hotels/motels in North Dakota that actively advertise in the eight commercial service airports. Direct employment is generated by airport/hotel shuttle drivers to airport and back.

Section 2.2 Sampling Procedures

- **Air Travel Visitors** – During the summer of 2004, interns with airport management distributed questionnaires to passengers waiting to board flights from each of the eight commercial service airports in North Dakota (Bismarck, Devils Lake, Dickinson, Fargo, Grand Forks, Jamestown, Minot and Williston). A total of 2,512 questionnaires were completed by passengers across these eight airports.
- **All other market segments** (airlines, airport tenants, ag sprayers, FBOs, GA management, travel agents and hotels/motels) were mailed questionnaires and returned these questionnaires in postage paid envelopes. To supplement these mailed questionnaires, the NDAC contacted tenants and GA managers to obtain more completed questionnaires. North Dakota Job Service Labor Statistics were used for total employment and payroll resources by industry class.

Among ag sprayers, there were some respondents who could belong to either the ag sprayer segment or the FBO segment. All ag sprayers whose business was at least 85 percent ag spraying-related were classified as ag sprayers. The others were classified as FBOs.

Travel agencies and hotels/motels are not, of course, 100 percent related to air travel. The data obtained from these two market segments was weighted according to how much of the operation's business was related to aviation (as determined by a question asked in the questionnaire to these market segments).





Response rates for the market segments who were mailed questionnaires are shown in Table 4.

Table 4
2004 Response Rates

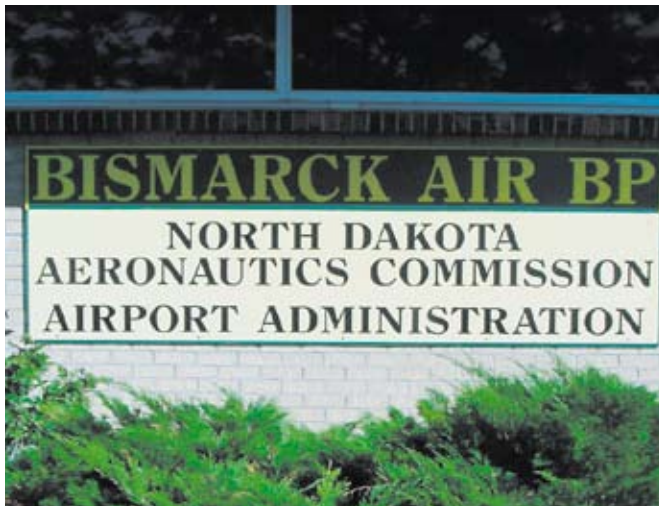
Survey Group	# Questionnaires Mailed	# Questionnaires Returned	Response Rate
Ag Sprayers, FBOs/Other	147	38	26%
Commercial Service Tenants ¹	157	36	23%
GA Management	81	81	100%
Travel Agents	139	15	11%
Hotels/Motels	45	6	13%
Total	569	176	31%
100% Airport-Related ²	385	155	40%

¹ Does not include ag sprayers or FBOs at an airport

² Includes ag sprayers, FBOs, commercial service tenants and GA management

Respondents (except air traveler visitors) were asked to report their 2004 expenditures in four different categories:

- Payroll (for both part-time and full-time employees)
- Taxes (state and local property/leasehold taxes, sales and excise taxes and state aviation fuel taxes)
- Capital improvements (each year from 2000 to 2004, with the five year average reported in this analysis)
- Other operating expenses (includes expenditures other than payroll, taxes and capital improvements)





Section 2.3 Data Extrapolation

As noted in Table 4, only the GA management group had a 100 percent response rate to the mailed questionnaires and follow-up by the NDAC. Thus it was necessary to extrapolate the responses received in order to reflect the employment and expenditure amounts represented by the entire population of each group. Table 5 shows the source of the weighting factors for each of the market segments.

Table 5
Sample Data Weighting Factors

Population	2004 Weighting Factor
Ag Sprayers	Acres sprayed
FBOs/Others	Companies
Commercial Service Tenants	Employment
Airlines	Enplanements
Concessions	Companies
Air Freight	Employment
Miscellaneous	Employment
Travel Agents	Companies
Hotels/Motels	Employees
Air Travel Visitors	Averages from questionnaires

Section 2.4 Induced Impact Multipliers

Employment and expenditure data obtained from all respondent groups represents direct employment and expenditure figures related to aviation in North Dakota. As noted, this direct spending is multiplied as the dollars associated with aviation are re-spent in local economies throughout the state. This “multiplier” effect can be demonstrated by an example of a mechanic whose wages are spent in the economy for items such as groceries, house payments, car payments and the like. Businesses that receive these payments, in turn, spend some of those monies on wages, taxes and other business expenses. Individuals and businesses that receive that money again spend it as they see fit.

In a similar way, the direct employment figures generated by aviation in North Dakota also multiply as businesses hire staff at hotels, airports, grocery stores and the like, partly to meet the needs caused by aviation direct expenditures. The total impact of aviation in North Dakota is made up of both the direct and induced spending and the direct and induced payroll dollars.





To generate the induced expenditures, money multipliers developed by North Dakota State University were used. The university's Economic Input-Output Model has coefficients for 17 different industrial sectors, the most common of which are listed in Table 6.

Table 6
Multipliers

Industrial Sector	Money Multiplier
Retail Trade	2.0871
Households	3.0871
Business, Personal Services	2.7113
Construction	2.4430

Source: North Dakota Input-Output Economic Projection Model, Version 1.1, Department of Agricultural Economics, North Dakota State University, March, 1988

¹ Measuring the Regional Significance of Airports, U.S. Department of Transportation, FAA, October, 1986

In reviewing these money multipliers, a reasonable “average” multiplier would be 2.5. That amount (2.5) is also consistent with other economic impact studies that define aviation multipliers between 2.0 and 3.0. This multiplier of 2.5 means that for each \$1.00 of direct aviation-related spending, an additional \$1.50 of induced spending is generated.

In the same way, an employment multiplier can be generated. Annual employment figures for North Dakota show that approximately 1.0 additional employees exist for every 1.0 basic industry employee. Using an aviation employment multiplier of 1.0 makes sense, as the multipliers used in other industries typically range from .75 to 1.50. Also, the FAA has found that estimates of this multiplier are most typically near 1.0¹. Thus, the total employment multiplier in this study is 2.0 (meaning that for every 1.0 direct employee, there is an additional 1.0 induced employee generated in local economies across the state).





This chapter presents the results of the 2004 Economic Impact of Aviation Study in North Dakota according to the market segments/population groups studied. Comparative data from the 1994 and 1999 studies are also presented.

Section 3.1 Commercial Air Service Tenants

Commercial air service tenants include the following market segments:

- Airlines
- Concessions (car rental, food and beverage, parking security, gift and news and other services)
- Government/Military
- Air Freight
- Other Miscellaneous Tenants

Some or all of these tenants are found at each of the eight commercial air service airports in North Dakota. Economic impacts for each tenant category are presented in this subsection of the report. (Ag sprayers and FBOs/Others are included in a later section of this report.)

Subsection 3.1.1 Airlines

In 2004, there were five airlines serving North Dakota's eight commercial air service airports.

- Fifty-two daily departures at eight commercial airports
- These airlines enplaned/boarded more than 586,000 passengers in 2004.
- One of these airlines is a major carrier (Northwest).
- One (Allegiant) is a scheduled charter carrier.
- The other three are regional airlines (Big Sky, Mesaba, United Express), which have code sharing agreements with Northwest, United or other major carriers.
- United Express is operated by SkyWest, Great Lakes, and Air Wisconsin carriers under contract for flight services.

Table 7 shows which airlines served which airports.

Table 7

Airlines Serving North Dakota in 1994, 1999 and 2004

Bismarck:	
1994	AirVantage, Frontier, GP Express, Northwest, United Express
1999	Big Sky, Mesaba, GP Express, Northwest, United Express
2004	Allegiant, Big Sky, Mesaba, Northwest, United Express
Devils Lake:	
1994	United Express
1999	United Express
2004	Mesaba, United Express
Dickinson:	
1994	United Express
1999	United Express
2004	Great Lakes
Fargo:	
1994	AirVantage, American, Frontier, Northwest, United Express
1999	Mesaba, Northwest, United Express
2004	Mesaba, Northwest, United Express
Grand Forks:	
1994	AirVantage, Frontier, Mesaba, Northwest, United Express
1999	Mesaba, Northwest
2004	Mesaba, Northwest
Jamestown:	
1994	United Express
1999	United Express
2004	Mesaba, United Express
Minot:	
1994	AirVantage, Big Sky, GP Express, Northwest, United Express
1999	Northwest, United Express
2004	Northwest
Williston:	
1994	United Express
1999	United Express
2004	Big Sky, Great Lakes

American terminated service in Fargo in 1/1994. Big Sky terminated service in Minot in 2/1994. Frontier began service in Bismarck, Grand Forks and Minot in 7/1994. GP Express terminated service in Bismarck and Minot in 2/1994. United Express in 2004 includes Great Lakes, Air Wisconsin, Atlantic Coast and SkyWest Airlines. Continental terminated service in Minot and Bismarck in 9/1993. Delta terminated service in Bismarck in 9/1992. United terminated service in Fargo in 9/1993. Allegiant began service in Bismarck in 5/2004.





Chapter 3: Statewide Impact of Market Segments

Over the years, the number of airlines serving these eight airports has changed:

- In 1987, four major and two regional airlines served North Dakota.
- In 1994, four major and four regional airlines served North Dakota.
- In 2004, one major, one scheduled charter, and three regional airlines served North Dakota.

In 2004, Northwest carried about 66 percent of all passengers across the eight commercial service airports

in North Dakota. United Express accounted for about 24 percent of all passengers; Great Lakes, six percent; Mesaba, three percent, and Allegiant one percent.

The average mix of business and leisure round trip airfares per passenger in 2004 was \$412. Competition will lower airfares. If people use the North Dakota airports to increase local flying and justify more service, the result will be more competition.

The employment and expenditure impact of these airlines on North Dakota is seen in Table 8.

Table 8
Airline Impact 1994, 1999, 2004

Airline 1994 Economic Impact			
Expenditures (\$000)	Direct	Induced ¹	Total
Payroll	\$6,553	\$9,829	\$16,382
Taxes	\$342	\$569	\$911
Capital Improvements ²	\$23	\$39	\$62
Other Operating Expenses	\$5,456	\$8,184	\$13,640
Total	\$12,374	\$18,621	\$30,995
1994 Employment	269	269	538
Airline 1999 Economic Impact			
Expenditures (\$000)	Direct	Induced ¹	Total
Payroll	\$3,918	\$5,877	\$9,795
Taxes	\$872	\$1,308	\$2,180
Capital Improvements ³	-	-	-
Other Operating Expenses	\$3,627	\$5,441	\$9,068
Total	\$8,417	\$12,626	\$21,043
1999 Employment	177	177	354
Airline 2004 Economic Impact			
Expenditures (\$000)	Direct	Induced ¹	Total
Payroll	\$5,322	\$7,983	\$13,305
Taxes	\$463	\$695	\$1,158
Capital Improvements ⁴	\$4	\$6	\$10
Other Operating Expenses	\$4,892	\$7,388	\$12,280
Total	\$10,681	\$16,072	\$26,753
2004 Employment	171	171	342

¹ Induced expenditures = Direct X 1.5.

³ Average expenditures between 1995 and 1999.

² Average expenditures between 1990 and 1994.

⁴ Average expenditures between 2000 and 2004.





Chapter 3: Statewide Impact of Market Segments

Subsection 3.1.2 Concessions

Table 9 shows the specific employment and expenditure figures associated with each of the types of concessions businesses in the eight commercial service airports in North Dakota. Security services transferred from private to TSA, which is now reported in the Government/Military group. This caused employment to be down in 2004.

Table 9
Concessions Employment and Expenditures 1994, 1999, 2004

1994, 1999 and 2004 Specific Impact			
Concession	1994 Employment	1999 Employment	2004 Employment ¹
Car Rental	136	137	103
Food and Beverages	94	66	36
Parking	37	27	19
Security	26	21	0 ³
Gift and News	17	3	18
Other	16	16	0
Total	326	270	176
Concession	1994 Expend. (000)	1999 Expend. (000)	2004 Expend. ² (000)
Car Rental	\$4,354	\$187	\$1,957
Food and Beverages	\$1,428	\$377	\$684
Parking	\$797	\$83	\$361
Security	\$653	\$78	\$0 ³
Gift and News	\$504	\$0	\$342
Other	\$628	\$0	\$95
Total	\$8,364	\$725	\$3,439

¹ NDAC estimates.

² Based on NDAC estimate of \$19,000 per car rental employee.

³ TSA employment, expenditure data moved to Government/Military category.
Totals may not sum due to rounding.





Chapter 3: Statewide Impact of Market Segments

Table 10 shows the direct, induced and total expenditures and employment associated with concessions business in 1994, 1999 and 2004. Direct economic impact of concessions in 2004 was \$5.5 million, and the category employed 176 people.

Table 10
Concessions Impact 1994, 1999, 2004

Concessions 1994 Economic Impact			
Expenditures (\$000)	Direct	Induced ¹	Total
Payroll	\$2,252	\$3,378	\$4,465
Taxes	\$99	\$149	\$248
Capital Improvements ²	\$408	\$611	\$1,017
Other Operating Expenses	\$5,604	\$8,406	\$14,010
Total	\$8,363	\$12,544	\$20,908
1994 Employment	326	326	652
Concessions 1999 Economic Impact			
Expenditures (\$000)	Direct	Induced ¹	Total
Payroll	\$495	\$743	\$1,238
Taxes	\$43	\$65	\$108
Capital Improvements ³	\$7	\$11	\$18
Other Operating Expenses	\$181	\$272	\$453
Total	\$726	\$1,091	\$1,817
1999 Employment	270	270	540
Concessions 2004 Economic Impact			
Expenditures (\$000)	Direct	Induced ¹	Total
Payroll	\$2,439	\$3,569	\$6,008
Taxes	\$573	\$860	\$1,433 ⁶
Capital Improvements ⁴	\$67	\$101	\$168
Other Operating Expenses	\$2,375	\$3,562	\$5,937
Total	\$5,454	\$8,092	\$13,546
2004 Employment	176	176	352

¹ Induced expenditures = Direct X 1.5.

² Average expenditures between 1990 and 1994.

³ Average expenditures between 1995 and 1999.

⁴ Average expenditures between 2000 and 2004.

⁵ Based on average salary of \$19,000 (North Dakota Job Service estimate for car rental employees).

⁶ Based on NDAC estimate of 27 concessions businesses and a survey average of \$21,254 per business.





Subsection 3.1.3 Government/Military

This section includes the economic impact of many different aviation-related activities. Included in this category are state agencies, FAA airport/control tower personnel, weather service operations, NDAC activities, TSA employees and members of the National Guard. (The economic impact of various military bases in North Dakota is not included in this analysis, as the bases are not located on public airport property.) In North Dakota, the Civil Air Patrol operates search and rescue missions for missing persons or security support services.

Table 11 shows employment and expenditure data for the government/military market segment, while Table 12 on the following page shows the economic impact of this segment.

Table 11
Government/Military Employment and Expenditures
1994, 1999, 2004

	1994	1999	2004
Total (Direct)	1,364	1,067	844
Total (Direct)²	\$56,309	\$41,042	\$64,158

¹ Based on estimated annual salary of \$39,874 (average of 1994 and 1999 yearly salaries).

² (\$000).





Table 12
Government/Military Impact 1994, 1999, 2004

Government/Military 1994 Economic Impact			
Expenditures (\$000)	Direct	Induced ¹	Total
Payroll	\$29,032	\$43,548	\$72,580
Taxes	\$0	\$0	\$0
Capital Improvements ²	\$12,225	\$17,586	\$29,811
Other Operating Expenses	\$15,502	\$23,253	\$38,755
Total	\$56,759	\$84,387	\$141,146
1994 Employment	1,364	1,364	2,728
Government/Military 1999 Economic Impact			
Expenditures (\$000)	Direct	Induced ¹	Total
Payroll	\$24,500	\$36,750	\$61,250
Taxes	\$0	\$0	\$0
Capital Improvements ³	\$3,124	\$4,686	\$7,810
Other Operating Expenses	\$13,418	\$20,127	\$33,545
Total	\$41,042	\$61,563	\$102,605
1999 Employment	1,067	1,067	2,134
Government/Military 2004 Economic Impact			
Expenditures (\$000)	Direct	Induced ¹	Total
Payroll	\$33,654	\$50,481	\$84,135
Taxes	\$0	\$0	\$0
Capital Improvements ⁴	\$15,237	\$22,856	\$38,093
Other Operating Expenses	\$15,267	\$22,901	\$38,168
Total	\$64,158	\$96,238	\$160,396
2004 Employment	844	844	1,688

¹ Induced expenditures = Direct X 1.5.

² Average expenditures between 1990 and 1994.

³ Average expenditures between 1995 and 1999.

⁴ Average expenditures between 2000 and 2004.

⁵ Based on average salary of \$39,874 (average of 1994 and 1999 salaries).

The Grand Forks and Minot areas also house major Air Force bases. Because these bases are not on the property of the commercial service airports in North Dakota, their economic impact is not included in this report. However, it is estimated that the direct economic impact of the Air Force base in Grand Forks is \$300 to \$350 million per

year. The statewide military aviation economic impact of Air Force bases and National Guard units is \$1 billion per year. The Minot Air Force Base work force of more than 6,000 military members and civilian employees makes it one of the largest single employers in North Dakota.





Chapter 3: Statewide Impact of Market Segments

Subsection 3.1.4 Air Freight

Major air freight companies in North Dakota include Federal Express, UPS, DHL and other smaller delivery services and FBOs offering overnight delivery. Air freight is a significant economic contributor in North Dakota, with a direct impact of \$10.1 million and a direct employment of 280 people. Mail order and Internet purchases, along with U.S. mail, are flown air freight to North Dakota at the eight commercial airports daily.



Table 13
Air Freight Impact 1994, 1999, 2004

Air Freight 1994 Economic Impact			
Expenditures (\$000)	Direct	Induced ¹	Total
Payroll	\$4,358	\$6,537	\$10,895
Taxes	\$25	\$38	\$63
Capital Improvements ²	\$110	\$165	\$275
Other Operating Expenses	\$5,372	\$5,809	\$9,681
Total	\$8,366	\$12,548	\$20,914
1994 Employment	326	326	652
Air Freight 1999 Economic Impact			
Expenditures (\$000)	Direct	Induced ¹	Total
Payroll	\$5,649	\$8,474	\$14,123
Taxes	\$18	\$27	\$45
Capital Improvements ³	\$100	\$150	\$250
Other Operating Expenses	\$1,892	\$2,838	\$4,730
Total	\$7,659	\$11,489	\$19,148
1999 Employment	388	388	776
Air Freight 2004 Economic Impact			
Expenditures (\$000)	Direct	Induced ¹	Total
Payroll	\$8,678	\$13,017	\$21,695
Taxes	\$13	\$20	\$33
Capital Improvements ⁴	\$72	\$108	\$180
Other Operating Expenses	\$1,365	\$2,048	\$3,413 ⁶
Total	\$10,128	\$15,193	\$25,321
2004 Employment	280	280	560

¹ Induced expenditures = Direct X 1.5.

² Average expenditures between 1990 and 1994.

³ Average expenditures between 1995 and 1999.

⁴ Average expenditures between 2000 and 2004.

⁵ Based on North Dakota Job Service estimate of 171 employees at an average salary of \$30,994.

⁶ 2004 taxes, capital improvements, other operating expenses based on averages from 1999 data.





Subsection 3.1.5 Miscellaneous Tenants

This section includes employers who operate on airport property, individuals/corporations renting airport land and property leased by various commercial service airports. Such property includes office space, hangars and farmland. Users include private manufacturers, flying clubs, utility companies and air ambulance companies. Members of this group may or may not be aviation-related, but they are all located on airport property.

Air medical and emergency services based at North Dakota's local airports are the closest places for airlifting to another medical facility. Companies in North Dakota operate both helicopter and fixed wing turbo-speed aircraft to help local citizens overcome a medical catastrophe. Delivery of blood, organs, medical services as well as burn transfers are performed quickly to limit human suffering. Air ambulance firms using local airports make it possible to save lives – and that is an immeasurable value to communities throughout the state.

In total, miscellaneous tenants at North Dakota's eight commercial service airports had a direct economic impact of \$35.1 million in 2004, with a direct employment of 919.





Chapter 3: Statewide Impact of Market Segments

Table 14
Miscellaneous Tenant Impact 1994, 1999, 2004

Miscellaneous Tenant 1994 Economic Impact			
Expenditures (\$000)	Direct	Induced ¹	Total
Payroll	\$432	\$649	\$1,081
Taxes	\$21	\$32	\$53
Capital Improvements ²	\$25	\$37	\$62
Other Operating Expenses	\$238	\$357	\$595
Total	\$716	\$1,075	\$1,791
1994 Employment	33	33	66
Miscellaneous Tenant 1999 Economic Impact			
Expenditures (\$000)	Direct	Induced ¹	Total
Payroll	\$2,007	\$3,011	\$5,018
Taxes	\$51	\$77	\$128
Capital Improvements ³	\$107	\$161	\$268
Other Operating Expenses	\$1,639	\$2,459	\$4,098
Total	\$3,805	\$5,708	\$9,513
1999 Employment	76	76	152
Miscellaneous Tenant 2004 Economic Impact			
Expenditures (\$000)	Direct	Induced ¹	Total
Payroll	\$30,376	\$45,564	\$75,940
Taxes	\$111	\$167	\$278
Capital Improvements ⁴	\$3,677	\$5,516	\$9,193
Other Operating Expenses	\$958	\$1,437	\$2,395
Total	\$35,122	\$52,684	\$87,806
2004 Employment	919	919	1,838

¹ Induced expenditures = Direct X 1.5.

² Average expenditures between 1990 and 1994.

³ Average expenditures between 1995 and 1999.

⁴ Average expenditures between 2000 and 2004.

⁵ Based on 369 employees at an average salary of \$27,667 (North Dakota Job Service estimates).





Section 3.2 General Aviation (GA)

The U.S. Department of Transportation estimates there are about 210,000 aircraft in the GA fleet across the country, and that these aircraft are involved in 27.4 million hours of flight operation. The economic impact of GA on a national basis is estimated by the GA at 1.3 million jobs and \$100 billion in expenditures.

There are 82 public use general aviation airports in North Dakota. As shown in Table 15, these airports housed 810 airplanes and accommodated a little more than 180,000 operations, both numbers up slightly from 1999. (Note: The aircraft and operations on the approximately 220 private airfields are not included in the numbers in Table 15.)

In North Dakota, general aviation airport tenants are typically ag sprayers or FBOs. Sometimes, these tenants also serve as the day-to-day managers of these general aviation airports. Appendix C highlights the economic impact per airport in the general aviation 82-airport listing.

GA management had a combined direct economic impact of \$37.8 million in 2004. This represents an increase of 60 percent over the economic impact in 1999. The increase is due to an additional \$7.5 million annually in FAA construction funds for general aviation airport entitlements. Direct employment in 2004 was 127 employees. Combined direct and induced economic impact of GA management in 2004 was \$94.5 million, with a combined employment of 254. (See Table 18 for a breakdown of these figures.)





Chapter 3: Statewide Impact of Market Segments

Table 15
General Aviation Activity 1994, 1999, 2004

	BASED AIRCRAFT			TOTAL OPERATIONS		
	1994	1999	2004	1994	1999	2004
Arthur	5	4	4	1,010	510	310
Ashley	2	4	3	600	1,200	1,000
Beach	6	5	6	1,830	1,020	1,660
Beulah	18	9	11	4,112	2,512	1,500
Bottineau	13	11	16	4,520	3,320	4,000
Bowbells	7	3	2	1,010	406	506
Bowman	11	15	13	4,200	2,910	2,310
Cando	9	7	5	2,950	3,150	3,550
Carrington	5	10	10	3,720	2,000	2,000
Casselton	52	51	52	18,250	15,450	12,650
Cavalier	17	13	15	3,450	2,750	3,492
Columbus	4	2	0	1,110	210	10
Cooperstown	14	12	16	3,050	2,100	4,100
Crosby	15	14	11	2,220	2,020	1,620
Drayton	2	2	2	1,420	600	600
Edgeley	4	5	5	820	1,420	1,630
Elgin	3	2	2	320	160	50
Ellendale	7	4	5	2,650	2,050	2,160
Enderlin	4	4	8	1,920	1,520	2,440
Fessenden	1	1	1	800	1,110	710
Fort Yates	0	0	0	200	200	200
Gackle	0	0	0	30	20	20
Garrison	8	9	12	3,120	2,720	2,780
Garrison Dam	0	0	0	110	100	60
Glen Ullin	6	6	7	820	820	1,000
Grafton	24	18	20	11,490	4,910	5,910
Grenora	1	1	0	400	350	10
Gwinner	10	8	8	1,700	3,700	4,000
Harvey	6	6	7	2,000	3,000	1,150
Hazen	8	3	2	2,800	1,000	600
Hazelton	2	1	0	310	200	236
Hettinger	19	20	18	3,130	2830	2,230





Chapter 3: Statewide Impact of Market Segments

Table 15 continued
General Aviation Activity 1994, 1999, 2004

	BASED AIRCRAFT			TOTAL OPERATIONS		
	1994	1999	2004	1994	1999	2004
Hillsboro	11	16	21	3,030	3,450	3,650
Kenmare	0	15	17	2,900	2,300	2,400
Killdeer	1	2	2	360	540	210
Kindred	17	23	40	3,550	4,050	5,000
Kulm	2	1	2	300	40	40
Lakota	10	6	8	1,820	1,020	3,500
LaMoure	8	10	10	2,620	2,220	2,220
Langdon	10	12	12	1,550	1,900	2,000
Larimore	19	21	21	7,490	6,590	7,000
Leeds	9	10	8	1,420	1,820	1,620
Lidgerwood	3	0	0	300	300	350
Linton	11	14	17	1,750	1,700	1,800
Lisbon	10	10	10	1,536	1,256	1,856
Maddock	3	3	10	900	1,500	2,210
Mandan	26	32	32	9,100	8,100	8,100
Mayville	5	6	6	5,240	4,040	6,520
McClusky	1	1	1	610	510	200
McVile	0	2	2	160	610	510
Milnor	2	2	1	250	320	200
Minto	7	8	5	1,700	2,200	1,800
Mohall	5	4	5	844	1,144	844
Mott	4	7	7	570	1,150	1,150
Napoleon	1	1	2	350	350	280
New Rockford	6	4	4	2,360	960	1,360
New Town	2	2	5	1,200	800	700
Northwood	13	12	11	8,070	1,830	6,310
Oakes	14	16	11	2,860	2,910	1,610
Page	-	-	13	-	-	3,500
Park River	8	8	6	3,260	3,230	4,200
Parshall	12	8	8	1,500	760	760
Peace Garden	0	0	0	550	300	300
Pembina	7	15	9	2,360	1,660	1,384
Plaza	0	0	0	20	20	20
Richardton	0	0	0	82	42	10





Chapter 3: Statewide Impact of Market Segments

Table 15 continued
General Aviation Activity 1994, 1999, 2004

	BASED AIRCRAFT			TOTAL OPERATIONS		
	1994	1999	2004	1994	1999	2004
Rolette	2	2	2	1,304	1,330	430
Rolla	12	10	8	2,070	2,400	2,000
Rugby	11	14	12	4,300	2,800	2,000
Stanley	15	11	15	3,500	1,540	1,100
St. Thomas	11	7	6	2,210	1,510	1,300
Tioga	32	23	53	2,900	2,950	9,250
Towner	5	5	5	1,520	920	920
Turtle Lake	2	3	3	330	710	800
Valley City	29	35	38	8,250	7,850	4,650
Wahpeton	32	34	30	12,000	10,040	10,840
Walhalla	7	9	6	2,300	1,200	1,300
Washburn	10	6	7	1,420	1,200	1,270
Watford City	12	12	12	3,080	2,100	2,300
West Fargo	50	40	36	15,850	9,250	8,300
Westhope	2	4	5	370	230	420
Wishek	1	3	4	520	900	830
TOTALS	743	738	810	218,608	172,920	185,818
% Change			+9.7			+7.5





Chapter 3: Statewide Impact of Market Segments

GA airports, like all businesses, must compete for business, and not all of them thrive. Table 16 shows a list of 20 airports that have closed over 23 years. Since the last study in 1999, two airports (Hebron and Leonard) have closed. In addition, Table 17 lists airports that the NDAC considers “at risk.” GA airports’ main sources of revenues would come from ag sprayers and FBO operations.

These airports must find business from these, and other local users, to sustain the viability of their operations. The impact of losing an airport will impact not only these customers, but also the economic development of the area and potential tourism dollars to the local economy.

Table 16
Airports Closed for Public Use in North Dakota
(20 Airports in 23 Years)

Airport	Year Closed	Reason
Hebron	2003	Airport land lease expired, low activity
Leonard	2003	Poor runway condition, obstructions, low activity
Regent	1998	Tower constructed nearby
Inkster	1997	Low activity
Wyndmere	1995	Low activity
Glenburn	1995	Liability risk and low activity
Reeder	1993	Poor runway condition and low activity
Medora	1992	Airport safety concerns
Lake Williams Robinson	1992	Low activity
Noonan	1987	Low activity and high operating cost
Center	1986	Poor runway condition and high operating cost
Makoti	1986	Liability risk and high operating cost
Drake	1986	Liability risk, low activity, high operating cost
Underwood	1985	Low activity and concern over airport safety
Portal	1984	Low activity and high operating cost
Wimbledon	1983	Low activity and liability risk
Steele	1981	Low activity
Sherwood	1979	Low activity
Forman	1971	Too close to another airport
Ray	1970	Low activity





Table 17
At-Risk Public Airports in North Dakota

Airport	2000 Population	2004 Aircraft Based	2004 Operations
Columbus	151	0	10
Elgin	659	2	50
Gackle	335	0	20
Grenora	202	0	10
Hazelton	237	0	236
Lidgerwood	738	0	350
McClusky	415	1	200
McVile	470	2	510
Milnor	711	1	200
Plaza	167	0	20
Richardton	619	0	10





How Are General Aviation Airports Used?

There are many ways the local airport can affect your community, such as bringing business activity to your community, providing humanitarian flights, supporting aerial surveys for infrastructure improvements and

providing personal and recreational opportunities that make your community a better place to live. Following are some of the common uses for general aviation airports to fuel growth in North Dakota:

Business	Personal use	Aviation-related
Transport business people	Personal travel	Air charter service (parts and people)
Meetings	Recreation	Flight training
Events	Providing airplane rides	Aircraft rental
Other company locations	Transporting friends and family	Sightseeing
Customer visits	Humanitarian missions	Aircraft maintenance
Economic development	Skydiving	Aircraft fueling (local, cross country aircraft)
Cargo	Glider operations	Post-maintenance test flights
Just-in-time parts		
Products	Weather	Agriculture
Time-sensitive documents	Current weather information	Spraying and seeding
News gathering for media outlets	Internet	Field and crop inspection
Radio	Radio	Aerial crop survey
TV	Phone	Transport of parts
Newspaper		Transport of people to agricultural events
Aerial survey for real estate development	Medical	Livestock sales flights
Aerial photography	Fixed-wing cross country transport	Rain enhancing/hail suppression
Tourism access	Helicopter transport	
Power line patrol	Delivery, transport of medical supplies	
Gas line patrol	Delivery, transport of blood, organs	
	Transport doctors and other specialists	
Governments		
Law enforcement	Cross country navigation for aircraft	
Search and rescue	Airports provide visual reference from air	
Crime surveillance	Potential landing site for emergencies	
Drug enforcement	Ground-based navigation aides	
Disaster relief		
Military	Education/entertainment	
Wildlife counts	Pre-school airport visits	
Visits by politicians	Airport outreach programs, schools	
Prisoner transport	Youth camps	
Aerial surveying	Teacher workshops	
Mapping	Young Eagle rides (children ages 8 to 17)	
Highway construction	Fly-ins	
Infrastructure improvements	Air shows	





Chapter 3: Statewide Impact of Market Segments

Table 18 shows the economic impact of the GA airports spread across the state of North Dakota. Airports support many activities related to health, welfare, recreation and business, touching and improving the quality of everyone's lives, even those who are not direct users. Note that expenditure growth has been substantial over the past five years, with a 2004 direct economic impact of \$37.8 million and direct employment of 127 people.

Table 18
GA Management Impact 1994, 1999, 2004

GA Management 1994 Economic Impact			
Expenditures (\$000)	Direct	Induced ¹	Total
Payroll	\$1,135	\$1,703	\$2,838
Taxes	\$0	\$0	\$0
Capital Improvements ²	\$4,405	\$6,607	\$11,012
Other Operating Expenses	\$2,037	\$3,056	\$5,093
Total	\$7,577	\$11,365	\$18,942
1994 Employment	78	78	156
GA Management 1999 Economic Impact			
Expenditures (\$000)	Direct	Induced ¹	Total
Payroll	\$3,459	\$5,189	\$8,648
Taxes	\$0	\$0	\$0
Capital Improvements ³	\$13,045	\$19,568	\$32,613
Other Operating Expenses	\$6,724	\$10,086	\$16,810
Total	\$23,229	\$34,844	\$58,844
1999 Employment	134	134	268
GA Management 2004 Economic Impact			
Expenditures (\$000)	Direct	Induced ¹	Total
Payroll	\$3,414	\$5,121	\$8,535
Taxes	\$0	\$0	\$0
Capital Improvements ⁴	\$28,281	\$42,422	\$70,703
Other Operating Expenses	\$6,123	\$9,185	\$15,308
Total	\$37,818	\$56,728	\$94,546 ⁵
2004 Employment	127	127	254

¹ Induced expenditures = Direct X 1.5.

² Average expenditures between 1990 and 1994.

³ Average expenditures between 1995 and 1999.

⁴ Average expenditures between 2000 and 2004.

⁵ Includes 82 GA airports and 8 commercial airports.



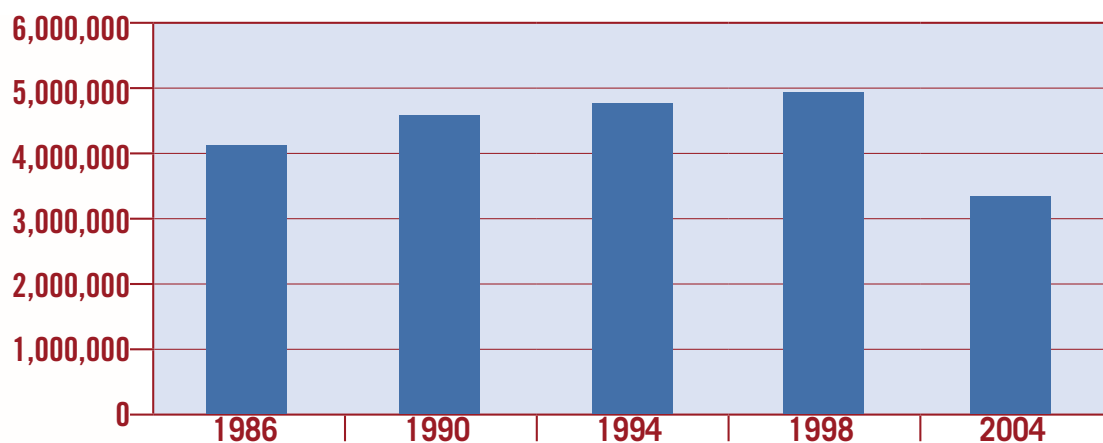


Section 3.3 Ag Sprayers

It is estimated that without the use of crop protection products to control insects, weeds and diseases, crop production may be reduced to 50 percent. Even with the adoption of treated seeds and genetically enhanced seeds, crop protection products continue to play a major role in agriculture in the United States. Ag spraying is one economical method of crop chemical application in North Dakota. Agriculture plays a strong role in

the economy of North Dakota. Aerial sprayers are highly trained professionals with the equipment and skills to perform aerial fire fighting and surveillance. Thus, it is not surprising that ag sprayers represent a significant portion of aviation's economic impact in North Dakota. According to the NDAC, there are 147 ag sprayer organizations registered in North Dakota. These operations sprayed 3.3 million acres in 2004, using 283 airplanes (see Figure 3).

Figure 3
Aerial Acres Sprayed





Chapter 3: Statewide Impact of Market Segments

Based on the survey results and data extrapolation based on the number of ag sprayer companies registered in North Dakota, the direct economic impact of ag sprayers in North Dakota in 2004 was \$33 million, with an

employment base of 425. Combined direct and induced expenditures in 2004 totaled \$82.5 million, with total employment of 850.

Table 19
Ag Sprayers Impact 1994, 1999, 2004

Ag Sprayers 1994 Economic Impact			
Expenditures (\$000)	Direct	Induced ¹	Total
Payroll	\$4,628	\$6,942	\$11,570
Taxes	\$394	\$591	\$985
Capital Improvements ²	\$1,387	\$2,081	\$3,468
Other Operating Expenses	\$12,218	\$18,327	\$30,545
Total	\$18,627	\$27,941	\$46,568
1994 Employment	687	687	1,374
Ag Sprayers 1999 Economic Impact			
Expenditures (\$000)	Direct	Induced ¹	Total
Payroll	\$1,828	\$2,742	\$4,570
Taxes	\$105	\$158	\$263
Capital Improvements ³	\$296	\$444	\$740
Other Operating Expenses	\$7,127	\$10,691	\$17,818
Total	\$9,356	\$14,034	\$23,390
1999 Employment	568	568	1,136
Ag Sprayers 2004 Economic Impact			
Expenditures (\$000)	Direct	Induced ¹	Total
Payroll	\$12,865	\$19,298	\$32,163 ⁶
Taxes	\$360	\$540	\$900
Capital Improvements ⁴	\$268	\$402	\$670
Other Operating Expenses	\$19,498	\$29,247	\$48,745
Total	\$32,991	\$49,487	\$82,478
2004 Employment	425	425	850 ⁵

¹ Induced expenditures = Direct X 1.5.

² Average expenditures between 1990 and 1994.

³ Average expenditures between 1995 and 1999.

⁴ Average expenditures between 2000 and 2004.

⁵ North Dakota Job Service estimate.

⁶ Average salary estimate from North Dakota Job Service of \$30,270.





Section 3.4 FBOs/Others

This group includes Fixed Base Operators (FBOs), air taxi operators, aircraft dealers, avionics and mechanics not included in the ag sprayer market segment. According to NDAC information, there were 63 FBOs located on public airports across North Dakota. Many FBOs are contract managers at secondary GA airports, providing day-to-day management of the facility, including snow removal, field maintenance and enforcement of safety regulations at the airport.

Included in this category is the University of North Dakota (UND) Center for Aerospace Sciences, which is located in Grand Forks. This institution employs 363 people and is one of the nation's leading educational centers for four-year degree programs (airport management, aviation management, aeronautical studies, airway science and meteorological studies). The school also offers graduate programs in space studies, computer science and fixed-winged helicopter flight instruction.

An interesting aviation business based in Fargo is Weather Modification, Inc. (WMI). This is a company that, along with Fargo Jet Center, opened a new facility in what is called the North General Aviation Area in 1995. Since then, the company has grown to be the largest cloud seeding company in the world, with operations across the globe. WMI is a great example of a business that has taken advantage of airport, federal and private investment monies to build a strong business based in North Dakota.

Based on survey and data extrapolation, the FBO/Other market segment had a direct economic impact of \$23.3 million and employed 739 people in 2004.





Chapter 3: Statewide Impact of Market Segments

Table 20
FBOs/Others Impact 1994, 1999, 2004

FBOs/Others 1994 Economic Impact			
Expenditures (\$000)	Direct	Induced ¹	Total
Payroll	\$13,166	\$19,749	\$32,915
Taxes	\$397	\$596	\$933
Capital Improvements ²	\$1,436	\$2,154	\$3,590
Other Operating Expenses	\$18,269	\$27,404	\$45,673
Total	\$33,268	\$49,902	\$83,170
1994 Employment	914	914	1,828
FBOs/Others 1999 Economic Impact			
Expenditures (\$000)	Direct	Induced ¹	Total
Payroll	\$11,245	\$16,876	\$28,112
Taxes	\$107	\$161	\$268
Capital Improvements ³	\$169	\$254	\$423
Other Operating Expenses	\$4,027	\$6,041	\$10,068
Total	\$15,548	\$23,322	\$38,870
1999 Employment	582	582	1,164
FBOs/Others 2004 Economic Impact			
Expenditures (\$000)	Direct	Induced ¹	Total
Payroll	\$9,871 ⁵	\$14,807	\$24,678
Taxes	\$154	\$231	\$385
Capital Improvements ⁴	\$488	\$732	\$1,220
Other Operating Expenses	\$12,765	\$19,148	\$31,913
Total	\$23,278	\$34,918	\$58,196
2004 Employment	739	739	1,478

¹ Induced expenditures = Direct X 1.5.

² Average expenditures between 1990 and 1994.

³ Average expenditures between 1995 and 1999.

⁴ Average expenditures between 2000 and 2004.

⁵ Based on 363 at an average salary of \$15,978 and 376 at an average salary of \$10,829.





Section 3.5 Travel Agencies

There were, according to the NDAC, 31 travel agencies serving North Dakota in 2004. This is a dramatic decrease from the 101 travel agencies operating in 1999. Web-based purchasing has had a strong negative impact on travel agency business, as has the decreased per-ticket payments to travel agencies by major air carriers. In 2004, the average travel agency had 66 percent of its business related to air travel.

Based on survey results and data extrapolation, travel agencies in North Dakota had a direct aviation-related economic impact of \$42 million in 2004, up substantially (61 percent) from the 1999 level of \$26.1 million. Total economic impact of aviation related to travel agencies in 2004 was \$105 million, with 1,075 direct employees. Consolidator travel agencies, including Tours, Rosenbluth (American Express) and Holland-America provided the majority of the 208 percent increase in employment since 1994.





Chapter 3: Statewide Impact of Market Segments

Table 21
Travel Agency Impact 1994, 1999, 2004

Travel Agency 1994 Economic Impact			
Expenditures (\$000)	Direct	Induced ¹	Total
Payroll	\$4,313	\$6,470	\$10,783
Taxes	\$185	\$277	\$462
Capital Improvements ²	\$123	\$184	\$307
Other Operating Expenses	\$2,529	\$3,794	\$6,323
Total	\$7,150	\$10,725	\$17,874
1994 Employment	349	349	698
Travel Agency 1999 Economic Impact			
Expenditures (\$000)	Direct	Induced ¹	Total
Payroll	\$24,592	\$36,888	\$61,480
Taxes	\$9	\$14	\$23
Capital Improvements ³	\$549	\$824	\$1,373
Other Operating Expenses	\$949	\$1,424	\$2,373
Total	\$26,099	\$39,150	\$65,249
1999 Employment	1,095	1,095	2,190
Travel Agency 2004 Economic Impact			
Expenditures (\$000)	Direct	Induced ¹	Total
Payroll	\$36,187	\$54,281	\$90,468 ⁶
Taxes	\$11	\$17	\$28 ⁷
Capital Improvements ⁴	\$1,470	\$2,205	\$3,675
Other Operating Expenses	\$4,305	\$6,458	\$10,763
Total	\$41,973	\$62,961	\$104,934
2004 Employment	1,075	1,075	2,150⁵

¹ Induced expenditures = Direct X 1.5.

² Average expenditures between 1990 and 1994.

³ Average expenditures between 1995 and 1999.

⁴ Average expenditures between 2000 and 2004.

⁵ Based on NDAC estimate.

⁶ Based on NDAC estimated annual salary of \$33,657 per travel agent.

⁷ Based on survey amount of \$239/agency multiplied times NDAC estimate of 31 agencies.





Section 3.6 Hotels/Motels

There are 45 hotels/motels that advertise for guests at the major commercial service airports in North Dakota. It is estimated, based on survey data, that 17 percent of hotel guest revenues are aviation related.

With those figures in mind, the direct aviation-related economic impact of hotels/motels in 2004 was \$1.8 million, with a direct employment base of 70. Direct employment is generated by hotel shuttle drivers to airport and back. Total aviation-related economic impact of hotels/motels in North Dakota in 2004 was \$4.5 million.





Chapter 3: Statewide Impact of Market Segments

Table 22
Hotels/Motels Impact 1994, 1999, 2004

Hotels/Motels 1994 Economic Impact			
Expenditures (\$000)	Direct	Induced ¹	Total
Payroll	\$728	\$1,092	\$1,758
Taxes	\$307	\$461	\$768
Capital Improvements ²	\$203	\$305	\$508
Other Operating Expenses	\$1,238	\$1,857	\$3,096
Total	\$2,477	\$3,715	\$6,192
1994 Employment	136	136	272
Hotels/Motels 1999 Economic Impact			
Expenditures (\$000)	Direct	Induced ¹	Total
Payroll	\$284	\$426	\$710
Taxes	\$22	\$33	\$55
Capital Improvements ³	\$152	\$228	\$380
Other Operating Expenses	\$605	\$908	\$1,513
Total	\$1,062	\$1,593	\$2,655
1999 Employment	52	52	104
Hotels/Motels 2004 Economic Impact			
Expenditures (\$000)	Direct	Induced ¹	Total
Payroll	\$805	\$1,208	\$2,013 ⁵
Taxes	\$94	\$141	\$235
Capital Improvements ⁴	\$153	\$230	\$383
Other Operating Expenses	\$751	\$1,127	\$1,878
Total	\$1,803	\$2,706	\$4,509
2004 Employment	70	70	140⁶

¹ Induced expenditures = Direct X 1.5.

² Average expenditures between 1990 and 1994.

³ Average expenditures between 1995 and 1999.

⁴ Average expenditures between 2000 and 2004.

⁵ North Dakota Job Service estimate of \$14,780 annual salary.

⁶ North Dakota Job Service estimate.

NOTE: Taxes, capital improvements and other operating expenses based on average per employee amounts from 1994 and 1999.





Section 3.7 Air Travel Visitors

Visitors coming by air travel to North Dakota can fly into one of the eight commercial service airports in the state, or they can fly into any of the 82 GA airports. Both of these are described in the following subsections.

Subsection 3.7.1 Commercial Service Air Travel Visitors

The commercial service airports in North Dakota contribute strongly to the economic impact of aviation in North Dakota, as seen previously in Table 8. Beyond the impact that airlines themselves provide, their use of these commercial airports brings visitors, for commercial reasons and pleasure. These visitors, in turn, also contribute to aviation's impact on North Dakota by spending on lodging, food, transportation, entertainment, retail goods and other things. This spending supports North Dakota businesses across the state.

As in previous editions of this study, air passengers were surveyed for this analysis. During the late summer of 2004, passengers were surveyed in each of the eight commercial air service airports. In total, 2,512 surveys were returned, as shown in Table 24.

In the questionnaire used for air travel passengers, visitors to the state were asked to report their spending on lodging, food and beverages, entertainment, retail trade, local transportation and business expenditures, along with any other spending. Table 25 shows the average expenditures made by visitors to the various airports, and the direct and induced economic impact of those average expenditures. Statewide average visitor air travel expenditure per trip was \$699.

Table 23
Passenger Survey Response

Airport	Questionnaires Reported
Bismarck	429
Devils Lake	116
Dickinson	111
Fargo	781
Grand Forks	453
Jamestown	106
Minot	479
Williston	37
TOTAL	2,512





Chapter 3: Statewide Impact of Market Segments

Table 24
Air Traveler Expenditures at Commercial Service Airports 1994, 1999, 2004

Commercial Service Airport	Average Trip Expenditures	Annual Enplanements	Percentage of Visitors ³	Estimated # of Visitors	In Thousands (\$000)		
					Direct	Induced	Total
1994							
Bismarck	\$235	132,287	57%	75,394	\$17,717	\$26,575	\$44,292
Devils Lake	\$191	3,932	52%	2,045	\$390	\$585	\$975
Dickinson	\$215	3,543	44%	1,558	\$334	\$501	\$835
Fargo	\$214	208,916	61%	127,438	\$27,272	\$40,908	\$68,180
Grand Forks	\$196	101,241	63%	63,781	\$12,512	\$18,768	\$31,180
Jamestown	\$230	3,433	47%	1,613	\$370	\$555	\$925
Minot	\$217	80,839	48%	38,802	\$8,420	\$12,630	\$21,050
Williston	\$227	6,841	62%	4,242	\$963	\$1,444	\$2,407
Total	216 ²	541,032	59% ²	314,872	\$67,978	\$101,967	\$169,945
1999							
Bismarck	\$511	127,812	48%	61,350	\$31,350	\$47,025	\$78,374
Devils Lake	\$588	2,833	75%	2,125	\$1,249	\$1,874	\$3,123
Dickinson	\$483	3,529	53%	1,870	\$903	\$1,355	\$2,258
Fargo	\$565	221,369	45%	99,616	\$56,283	\$84,425	\$140,708
Grand Forks	\$395	85,589	45%	38,515	\$15,213	\$22,820	\$38,034
Jamestown	\$346	2,874	49%	1,408	\$487	\$731	\$1,218
Minot	\$617	71,547	49%	31,481	\$19,424	\$29,135	\$48,559
Williston	\$877	5,441	51%	2,775	\$2,434	\$3,650	\$6,084
Total	\$547 ²	520,994	46% ²	239,140	\$127,343	\$191,015	\$318,359
2004							
Bismarck	\$641	159,963	45%	71,983	\$46,141	\$69,212	\$115,353
Devils Lake	\$598	2,946	63%	1,856	\$1,110	\$1,665	\$2,775
Dickinson	\$710	5,081	58%	2,947	\$2,092	\$3,138	\$5,230
Fargo	\$675	256,004	43%	110,082	\$74,305	\$111,458	\$185,763
Grand Forks	\$596	89,301	44%	39,292	\$23,418	\$35,127	\$58,545
Jamestown	\$612	2,495	49%	1,223	\$748	\$1,122	\$1,870
Minot	\$898	74,085	44%	32,597	\$29,272	\$43,908	\$73,180
Williston	\$365	6,144	58%	3,564	\$1,301	\$1,952	\$3,253
Total	\$699 ²	586,471	44% ²	258,047	\$178,387	\$267,582	\$445,969

Notes

¹ (Expenditure) Induced = Direct x 1.5

² Weighted average of all airports combined

³ Visitor percentage based on USDOT Ticket Sampling for CY 2004





Subsection 3.7.2 General Aviation/Air Taxi Travel Visitors

Air travel visitors to North Dakota can also arrive by air taxi, business or pleasure flying into any of the 82 GA airports and eight commercial airports in the state. Table 25 shows the number of general aviation air travel visitors coming to North Dakota by each of these 90 airports, and also shows the estimated spending in North Dakota by these visitors. The national general aviation air traveler average expenditure of \$75 per airport visitor was used for this report. Visiting passengers and flight crews spend money in the community and procure goods and services in support of their trips. Table 25A depicts \$32 million of general aviation air travel visitor expenditures in North Dakota at 90 airports in 2004.

Examples of air travel visitors to a North Dakota general aviation airport and/or reasons to visit are as follows:

- Hunting and fishing tourism
- Farm implement parts
- Oil industry exploration
- Visiting doctors to rural clinics
- Lignite energy research
- Livestock sales
- Local business meetings
- Aerial flight mapping
- Family vacations, weddings and community events
- Power line and pipeline patrols
- Contractor and engineer meetings
- Law enforcement and wildlife management
- Miscellaneous





Chapter 3: Statewide Impact of Market Segments

Table 25
GA Public 90 Airport Visitor Direct Expenditures 2004

Airport	2004 Itinerant GA Arrivals	2004 Air Taxi Arrivals	2004 Estimated True Transient Arrivals	2004 Estimated GA Visitors	2004 Estimated GA Expenditures
Arthur	50	5	18	64	\$4,764
Ashley	300	50	116	404	\$30,319
Beach	200	30	76	266	\$19,924
Beulah	200	150	116	404	\$30,319
Bismarck	11,178	5,953	5,653	19,786	\$1,483,973
Bottineau	1,000	100	363	1,270	\$95,288
Bowbells	50	5	18	64	\$4,764
Bowman	400	150	182	635	\$47,644
Cando	450	25	157	549	\$41,147
Carrington	400	100	165	578	\$43,313
Casselton	2,000	300	759	2,657	\$199,238
Cavalier	200	36	78	273	\$20,444
Columbus	10	0	3	11	\$788
Cooperstown	450	100	182	635	\$47,644
Crosby	100	100	66	231	\$17,325
Devils Lake	2,378	1,218	1,187	4,153	\$311,504
Dickinson	1,200	1,400	858	3,003	\$225,225
Drayton	100	10	36	127	\$9,525
Edgeley	100	10	36	127	\$9,525
Elgin	10	5	3	11	\$788
Ellendale	150	30	59	208	\$15,593
Enderlin	200	20	56	196	\$14,726
Fargo	16,207	5,897	7,294	25,530	\$1,914,759
Fessenden	50	5	18	64	\$4,764
Fort Yates	50	50	33	116	\$8,663
Gackle	10	0	3	11	\$788
Garrison	700	40	244	855	\$64,103
Garrison Dam	24	6	10	35	\$2,625
Glen Ullin	200	50	83	289	\$21,656
Grafton	1,500	150	545	1,908	\$143,062
Grand Forks	45,857	4,609	16,654	58,288	\$4,371,617
Grenora	5	0	2	7	\$525
Gwinner	550	1,050	528	1,848	\$138,600
Harvey	300	25	107	375	\$28,125





Chapter 3: Statewide Impact of Market Segments

Table 25 continued
GA Public 90 Airport Visitor Direct Expenditures 2004

Airport	2004 Itinerant GA Arrivals	2004 Air Taxi Arrivals	2004 Estimated True Transient Arrivals	2004 Estimated GA Visitors	2004 Estimated GA Expenditures
Hazen	200	50	83	289	\$21,656
Hazleton	100	3	34	119	\$8,922
Hettinger	200	200	132	462	\$34,650
Hillsboro	550	50	198	693	\$51,975
Jamestown	1,500	300	594	2,079	\$155,925
Kenmare	300	100	198	693	\$51,975
Kindred	900	100	330	1,155	\$86,625
Killdeer	50	5	18	63	\$4,725
Kulm	10	0	3	12	\$866
Lakota	780	25	266	930	\$69,733
LaMoure	300	10	103	258	\$19,350
Langdon	300	100	132	462	\$34,650
Larimore	2,500	5	827	2,893	\$216,996
Leeds	300	20	106	370	\$27,720
Lidgerwood	150	0	50	173	\$12,994
Linton	200	100	99	347	\$25,988
Lisbon	300	25	107	375	\$28,153
Maddock	300	5	101	352	\$26,421
Mandan	1,500	150	545	1,906	\$142,931
Mayville	2,500	50	842	2,945	\$220,894
McClusky	50	5	18	63	\$4,725
McVille	100	5	35	121	\$9,096
Milnor	35	5	14	47	\$3,552
Minot	5,108	3,650	2,890	10,115	\$758,625
Minto	200	0	66	231	\$17,325
Mohall	50	10	20	69	\$5,198
Mott	200	15	71	248	\$18,624
Napoleon	80	25	35	121	\$9,096
New Rockford	170	10	59	208	\$15,592
New Town	100	50	50	173	\$12,994
Northwood	2,000	50	677	2,368	\$177,581
Oakes	150	50	66	231	\$17,325
Park River	500	100	198	693	\$51,975
Parshall	100	25	41	144	\$10,828
Page	1,000	100	367	1,283	\$96,250





Chapter 3: Statewide Impact of Market Segments

Table 25 continued
GA Public 90 Airport Visitor Direct Expenditures 2004

Airport	2004 Itinerant GA Arrivals	2004 Air Taxi Arrivals	2004 Estimated True Transient Arrivals	2004 Estimated GA Visitors	2004 Estimated GA Expenditures
Peace Garden	125	25	50	173	\$12,994
Pembina	250	12	86	303	\$22,696
Plaza	10	0	3	12	\$866
Richardton	10	1	4	13	\$953
Rolette	100	15	38	133	\$9,962
Rolla	400	100	165	578	\$43,313
Rugby	300	100	132	462	\$34,650
Stanley	250	50	99	347	\$25,988
St. Thomas	150	5	51	179	\$13,427
Tioga	1,800	150	644	2,252	\$168,919
Towner	150	10	53	185	\$13,860
Turtle Lake	150	5	51	179	\$13,427
Valley City	750	250	330	1,155	\$86,625
Wahpeton	2,000	400	792	2,772	\$207,900
Walhalla	200	50	83	289	\$21,656
Washburn	150	10	53	185	\$13,860
Watford City	400	150	182	635	\$47,644
West Fargo	1,500	100	528	1,848	\$138,600
Westhope	100	5	35	121	\$9,096
Williston	1,825	600	800	2,801	\$210,065
Wishek	250	15	87	306	\$22,956
2004 Total	115,953	35,057	49,831	174,410	\$13,080,721
1999 Total	105,828	26,240	44,021	110,074	\$8,255,550
1994 Total	148,505	20,185	56,230	140,574	\$10,543,063

Source: FAA Form 5010

Table 25A
Public Airport Visitor Impact, 1994,1999, 2004

Public Airports			
Expenditures (000)	Direct	Induced	Total
1994	\$10,543	\$15,815	\$26,358
1999	\$8,255	\$12,384	\$20,640
2004	\$13,080	\$19,622	\$32,703





Section 3.8 Aviation Manufacturing

Aviation manufacturing is a growing part of the aviation industry in North Dakota. Several manufacturers of aviation parts and equipment have sprung up across the state in recent years. The following is a short list of these companies and what they do. Their impact on the state has not been totally quantified in expenditures, and some firms based on North Dakota airports are not included in statewide airport 2004 figures. They are all mentioned here to recognize their existence and impact on the state. Since they are a growing sector, they should perhaps be included in future estimates of aviation's impact in North Dakota. The following highlights some of these firms and their involvement in aviation manufacturing:

Cirrus Design – Manufactures wings and fuselages and aircraft parts. Based in Grand Forks since 1997. They have 291 employees. The Grand Forks development interests have invested nearly \$6 million in the company through equity investments, tax breaks and the building of a 67,000 square-foot plant. There were construction improvements of \$9 million in a 93,000 square-foot building and \$3 million in capital equipment. In 2004 Cirrus paid \$6.6 million in direct wages and had an estimated \$45.5 million economic impact in the region and have committed to employ 550 in the future.

Phone: 701-787-5229

Dakota Air Parts – Located on the Fargo Hector International Airport. The firm buys, sells and supports helicopter and fixed-wing aircraft and parts supply. They employ 19 staff on the airport with advanced aerospace logistics support. Phone: 701-297-9999

Fischer Flying Products (Jackson Manufacturing) – Manufactures 15 different models of kit planes that people build themselves. Based in Edgeley since 1965. They had five employees in 2004. Phone: 701-493-2286

Goodrich Corporation – Based on Jamestown Airport Industrial Park since 1970, with employees totaling 550 and recognized as the world's largest air cargo systems manufacturer. It holds contracts to produce air cargo systems for Boeing and Airbus aircraft. Annual payroll pushes nearly \$23,000,000. Phone: 701-252-6250

Hensley Aircraft – Moved all its primary operations of the Wolf sport aircraft to Devils Lake Municipal Airport in early 2005. Company plans 15 to 20 jobs as start-up aircraft manufacturers of Wolf airplane design. Phone: 952-449-0590

Killdeer Mountain Manufacturing – It has 166 employees and has produced aerospace electronics since 1988 for Boeing, Lockheed and Raytheon. Products include circuit cards, ground test support equipment, night vision panels and flight test adaptors. Company location is Killdeer, Hettinger and Halliday. Phone: 701-764-5651

Mandaree Enterprise Corporation – is a tribally owned American Indian company based Mandaree, ND (27 miles south of New Town) and formed in 1990. The company has 70 workers in three divisions of which 40 workers are in aerospace manufacturing to assemble cables, wires, and panels for F-16, F-18, B-2 Bombers, OH-58D Helicopter, C-17 Cargo Jet, and drone targets for Pentagon, Boeing, Vought Aircraft, and Northrop-Grumman contracts exceeding \$3,000,000 in global aerospace sales in 2004. Phone: 701-759-3399

Marburger Enterprises – Manufactures wing tips to enhance flight performance and increase swath width for agricultural planes. Based in Williston. Has one employee and was established in 1997. Phone: 701-774-0230





Section 3.8 Aviation Manufacturing continued

Mid-America Aviation – Manufactures gearboxes for fighter military planes and helicopters, and transmissions for helicopters. It has been based in West Fargo since 1992. The firm has 20 employees and had a payroll of \$400,000 in 2004.

Phone: 701-282-7782

Northrop Grumman Corporation – Is a leading designer, systems integrator and manufacturer of military surveillance and combat aircraft, defense electronics, and marine and space systems. The company supports 95 jobs and has been located in New Town since 1970.

Phone: 701-627-4714

Odegard Aviation – Specializes in building wings for the P-51 Mustang, a World War II fighter, also rebuilds WWII fighters. Based on Kindred-Hamry Field Airport with a staff of eight employees.

Phone: 701-428-9990

Tri-State Aviation – Based on Wahpeton-Harry Stern Airport and specializing in the restoration of World War II fighters and trainers. Established in 1973, the company has a staff of 10 employees.

Phone: 701-642-5777



*2004 Total aviation manufacturing jobs – 1,175

*2004 Estimated payroll – \$47.3 million





2004 Aviation Impacts in Review

- Aviation Expenditures in North Dakota for 2004 totaled \$1.2 million.
- Aviation jobs in North Dakota for 2004 totaled 12,002.
- At eight commercial airports there were 102 daily scheduled flights transporting 1.2 million passengers. General aviation averages 2100 operations per day at the 90 public airports for an annual total of 810,000 flights.
- Aviation manufacturing provides 1,175 direct jobs in North Dakota for aerospace contracts in 12 major companies across the state.
- Air travel tourism provides \$478 million (42 percent of total aviation statewide impacts) to local economics in hotels, motels, and recreation like fishing and hunting. An air traveler visitor spends \$699 per trip.
- Aerial sprayers assist the agriculture industry in treating over 3.3 million acres in North Dakota by 147 companies using 283 aircraft and helicopters.
- Air medical services by flying doctors and fixed-wing helicopter firms provide daily rural health care and emergency transport throughout North Dakota.
- Air freight “just-in-time” services by Federal Express, United Parcel (UPS) and DHL couriers are based on commercial airports and communities employing 280 freight handlers and drivers to all corners of the state.
- General aviation airports located in 82 communities provide \$111 million or 10 percent of aviation impacts through construction grants and safety improvements.
- Aerospace training occurs at all 90 airports, but not like Grand Forks based UND Aerospace with over 100 aircraft and 1,800 students training for aerospace careers.
- Air travel agency and tour operators employee 1,075 staff for worldwide travel through firms like American Express (formerly Rosenbluth), MLT-Northwest Airlines World Vacations and Holland America.
- There are 63 Aviation businesses are based at North Dakota airports, providing on-demand air charter, flight instruction, aircraft maintenance, sales and services. Firms like Basin Electric, Montana Dakota Utilities, Bobcat (Ingersol-Rand) and Ottertail Power are based on North Dakota airports.





Examples of Aviation Businesses in North Dakota

UND Aerospace programs are one of nation's biggest and best educational training colleges for the aviation industry. Since 1968, the academy has grown to the world's largest college training field for aircraft. The state-of-the-art \$83 million aerospace campus offers a technologically advanced training environment for 1,800 students. UND graduates fly for every major airline and work with corporate flight departments, aircraft manufacturers, NASA and the FAA. Flight training conducted by UND in 2004 was 108,263 hours flown.

Weather Modification uses atmospheric resource technologies to manage weather such as rainfall increases, snow pack growth, hail damage mitigation, fog clearing, weather radar and technical/technology-transfer consulting. The company has conducted weather operations and research since 1961 and is based in Fargo. Weather Modification employs 45 people in North Dakota and has global contracts. The firm uses 15 different aircraft and five radars with over 43,000 aircraft flight-hour experience.

Goodrich Corporation has been based on Jamestown Airport Industrial Airpark since 1970 and has over 500 employees. The company is recognized as the world's largest air cargo systems manufacturer for firms such as Boeing, Airbus and also has military contracts.

Cirrus Aircraft has been based in Grand Forks since 1997 and employs 291. This branch office manufacturers wings and fuselages for the world's largest selling general aviation aircraft.





Appendix A: Commercial Service Airport Impact

Each of the eight commercial service airports in North Dakota has a strong economic impact on its local economy. This appendix provides a summary of 9116 employment and \$861 million expenditures related to these airports in 2004.

Expenditures at these airports include spending on/by the following:

- Airlines
- Concessions
- Other Tenants/Miscellaneous
- Government/Military
- Ag Sprayers
- FBOs/Others
- Air Freight
- Travel Agents
- Hotels/Motels
- Air Travel Visitors
- Aviation Manufacturing

Table A1 is a summary of the spending and employment at each of the eight commercial air service airports.

Tables A2-A9 show how spending and employment break out among the different categories at each of the commercial air service airports.

Table A10 compares employment and expenditures from 1994 to 1999 to 2004.

Today, North Dakota airports share the functions and infrastructure of a modern city. The terminal complex, general aviation facilities, aviation support in maintenance, fire safety and operating pavements easily value in the millions of dollars. Modern North Dakota airports are “big business” for economic and tourism reasons, impacting the everyday business life of the entire state. One way or another, every person experiences the benefits of a commercial airport.





Appendix A: Commercial Service Airport Impact

**Table A-1 Commercial Service Report
2004 Economic Impact Statewide
(\$000)**

Airport	Expenditures			Employment		
	Direct	Induced ¹	Total	Direct	Induced ²	Total
Bismarck	\$71,503	\$107,257	\$178,759	558	558	1,116
Devils Lake	\$2,731	\$4,097	\$6,828	50	50	100
Dickinson	\$12,272	\$18,410	\$30,682	305	305	610
Fargo	\$144,900	\$217,352	\$362,252	1,545	1,545	3,090
Grand Forks	\$43,843	\$65,766	\$109,609	953	953	1,906
Jamestown	\$23,659	\$35,491	\$59,150	647	647	1,294
Minot	\$42,121	\$63,182	\$105,303	394	394	788
Williston	\$3,674	\$5,512	\$9,187	106	106	212
Total Impact	\$344,703	\$517,067	\$861,770	4,558	4,558	9,116

¹ Expenditure Induced = Direct X 1.5.

² Employment Induced = Direct X 1.0.

Note: capital improvement federal, state and local grants impact annual totals for expenditures.





Appendix A: Commercial Service Airport Impact

**Table A-2 Commercial Service Report
2004 Economic Impact of Bismarck
(\$000)**

Airport	Expenditures			Employment		
	Direct	Induced ¹	Total	Direct	Induced ²	Total
Airlines	\$2,704	\$4,056	\$6,760	44	44	88
Concessions	\$589	\$884	\$1,473	31	31	62
Miscellaneous	\$2,822	\$4,233	\$7,055	102	102	204
Gov't/Military	\$13,500	\$20,250	\$33,750	153	153	306
FB0s/0thers	\$801	\$1,202	\$2,003	74	74	148
Air Freight	\$1,061	\$1,592	\$2,653	32	32	64
Ag Sprayers	-	-	-	-	-	-
Travel Agencies	\$3,770	\$5,655	\$9,425	112	112	224
Hotels/Motels	\$115	\$173	\$287	10	10	20
Air Travel Visitors	\$46,141	\$69,212	\$115,353	-	-	-
Total Impact	\$71,503	\$107,257	\$178,759	558	558	1,116

¹ Expenditure Induced = Direct X 1.5.

² Employment Induced = Direct X 1.0.





Appendix A: Commercial Service Airport Impact

**Table A-3 Commercial Service Report
2004 Economic Impact of Devils Lake
(\$000)**

Airport	Expenditures			Employment		
	Direct	Induced ¹	Total	Direct	Induced ²	Total
Airlines	\$212	\$318	\$530	6	6	12
Concessions	-	-	-	-	-	-
Miscellaneous	\$470	\$705	\$1,175	17	17	34
Gov't/Military	\$519	\$779	\$1,298	13	13	26
FBOs/Others	-	-	-	-	-	-
Air Freight	\$166	\$249	\$415	5	5	10
Ag Sprayers	\$242	\$363	\$605	8	8	16
Travel Agencies	-	-	-	-	-	-
Hotels/Motels	\$12	\$18	\$30	1	1	2
Air Travel Visitors	\$1,110	\$1,665	\$2,775	-	-	-
Total Impact	\$2,731	\$4,097	\$6,828	50	50	100

¹ Expenditure Induced = Direct X 1.5.

² Employment Induced = Direct X 1.0.





Appendix A: Commercial Service Airport Impact

**Table A-4 Commercial Service Report
2004 Economic Impact of Dickinson
(\$000)**

Airport	Expenditures			Employment		
	Direct	Induced ¹	Total	Direct	Induced ²	Total
Airlines	\$580	\$870	\$1,450	7	7	14
Concessions	-	-	-	-	-	-
Miscellaneous	\$941	\$1,412	\$2,353	34	34	68
Gov't/Military	\$319	\$479	\$798	8	8	16
FBOs/Others	\$119	\$179	\$298	11	11	22
Air Freight	\$232	\$348	\$580	7	7	14
Ag Sprayers	-	-	-	-	-	-
Travel Agencies	\$7,977	\$11,966	\$19,943	237	237	474
Hotels/Motels	\$12	\$18	\$30	1	1	2
Air Travel Visitors	\$2,092	\$3,138	\$5,230	-	-	-
Total Impact	\$12,272	\$18,410	\$30,682	305	305	610

¹ Expenditure Induced = Direct X 1.5.

² Employment Induced = Direct X 1.0.





Appendix A: Commercial Service Airport Impact

**Table A-5 Commercial Service Report
2004 Economic Impact of Fargo
(\$000)**

Airport	Expenditures			Employment		
	Direct	Induced ¹	Total	Direct	Induced ²	Total
Airlines	\$2,217	\$3,326	\$5,543	48	48	96
Concessions	\$1,786	\$2,679	\$4,465	94	94	188
Miscellaneous	\$2,379	\$3,569	\$5,948	86	86	172
Gov't/Military	\$43,655	\$65,483	\$109,138	518	518	1,036
FB0s/0thers	\$2,480	\$3,720	\$6,200	229	229	458
Air Freight	\$3,082	\$4,623	\$7,705	93	93	186
Ag Sprayers	\$30	\$45	\$75	6	6	12
Travel Agencies	\$14,506	\$21,759	\$36,265	431	431	862
Hotels/Motels	\$460	\$690	\$1,150	40	40	80
Air Travel Visitors	\$74,305	\$111,458	\$185,763	-	-	-
Total Impact	\$144,900	\$217,352	\$362,252	1,545	1,545	3,090

¹ Expenditure Induced = Direct X 1.5.

² Employment Induced = Direct X 1.0.





Appendix A: Commercial Service Airport Impact

**Table A-6 Commercial Service Report
2004 Economic Impact of Grand Forks
(\$000)**

Airport	Expenditures			Employment		
	Direct	Induced ¹	Total	Direct	Induced ²	Total
Airlines	\$1,337	\$2,006	\$3,343	21	21	42
Concessions	\$627	\$941	\$1,568	33	33	66
Miscellaneous ³	\$8,011	\$12,016	\$20,027	342	342	684
Gov't/Military	\$2,432	\$3,648	\$6,080	61	61	122
FBOs/Others	\$3,931	\$5,897	\$9,828	363	363	726
Air Freight	\$3,612	\$5,418	\$9,030	109	109	218
Ag Sprayers	-	-	-	-	-	-
Travel Agencies	\$302	\$453	\$755	9	9	18
Hotels/Motels	\$173	\$260	\$433	15	15	30
Air Travel Visitors	\$23,418	\$35,127	\$58,545	-	-	-
Total Impact	\$43,843	\$65,766	\$109,609	953	953	1,906

¹ Expenditure Induced = Direct X 1.5.

² Employment Induced = Direct X 1.0.

³ Includes Aviation Manufacturing





Appendix A: Commercial Service Airport Impact

**Table A-7 Commercial Service Report
2004 Economic Impact of Jamestown
(\$000)**

Airport	Expenditures			Employment		
	Direct	Induced ¹	Total	Direct	Induced ²	Total
Airlines	\$178	\$267	\$445	5	5	10
Concessions	\$95	\$143	\$238	5	5	10
Miscellaneous ³	\$21,838	\$32,757	\$54,595	610	610	1,220
Gov't/Military	\$159	\$239	\$398	4	4	8
FBOs/Others	\$43	\$65	\$108	4	4	8
Air Freight	\$199	\$299	\$498	6	6	12
Ag Sprayers	\$151	\$227	\$378	5	5	10
Travel Agencies	\$236	\$354	\$590	7	7	14
Hotels/Motels	\$12	\$18	\$30	1	1	2
Air Travel Visitors	\$748	\$1,122	\$1,870	-	-	-
Total Impact	\$23,659	\$35,491	\$59,150	647	647	1,294

¹ Expenditure Induced = Direct X 1.5.

² Employment Induced = Direct X 1.0.

³ Includes Aviation Manufacturing





Appendix A: Commercial Service Airport Impact

**Table A-8 Commercial Service Report
2004 Economic Impact of Minot
(\$000)**

Airport	Expenditures			Employment		
	Direct	Induced ¹	Total	Direct	Induced ²	Total
Airlines	\$992	\$1,488	\$2,480	23	23	46
Concessions	\$342	\$513	\$855	18	18	36
Miscellaneous	\$470	\$705	\$1,175	17	17	34
Gov't/Military	\$1,156	\$1,734	\$2,890	29	29	58
FBOs/Others	\$184	\$276	\$460	17	17	34
Air Freight	\$696	\$1,044	\$1,740	21	21	42
Ag Sprayers	-	-	-	-	-	-
Travel Agencies	\$8,986	\$13,479	\$22,465	267	267	534
Hotels/Motels	\$23	\$35	\$58	2	2	4
Air Travel Visitors	\$29,272	\$43,908	\$73,180	-	-	-
Total Impact	\$42,121	\$63,182	\$105,303	394	394	788

¹ Expenditure Induced = Direct X 1.5.

² Employment Induced = Direct X 1.0.





Appendix A: Commercial Service Airport Impact

Table A-9 Commercial Service Report
2004 Economic Impact of Williston
(\$000)

Airport	Expenditures			Employment		
	Direct	Induced ¹	Total	Direct	Induced ²	Total
Airlines	\$1,105	\$1,657	\$2,763	7	7	14
Concessions	-	-	-	-	-	-
Miscellaneous	\$55	\$83	\$138	2	2	4
Gov't/Military	\$598	\$897	\$1,495	15	15	30
FBOs/Others	\$152	\$228	\$380	14	14	28
Air Freight	\$232	\$348	\$580	7	7	14
Ag Sprayers	-	-	-	-	-	-
Travel Agencies	\$219	\$329	\$548	60	60	120
Hotels/Motels	\$12	\$18	\$30	1	1	2
Air Travel Visitors	\$1,301	\$1,952	\$3,253	-	-	-
Total Impact	\$3,674	\$5,512	\$9,187	106	106	212

¹ Expenditure Induced = Direct X 1.5.

² Employment Induced = Direct X 1.0.





Appendix A: Commercial Service Airport Impact

**Table A-10 Commercial Service Report
1994, 1999, 2004 Economic Impact Statewide
(\$000)**

Airport	Expenditures ¹			Employment ²		
	1994	1999	2004	1994	1999	2004
Bismarck	\$119,173	\$106,325	\$178,759	1,566	1,556	1,116
Devils Lake	\$9,805	\$12,178	\$6,828	150	95	100
Dickinson	\$3,470	\$17,745	\$30,682	56	535	610
Fargo	\$180,983	\$241,338	\$362,252	2,590	2,120	3,090
Grand Forks	\$124,343	\$83,343	\$109,609	1,762	1,690	1,906
Jamestown	\$7,223	\$4,327	\$59,150	156	105	1,294
Minot	\$52,848	\$63,090	\$105,303	542	422	788
Williston	\$8,910	\$13,843	\$9,187	134	163	212
Total Impact	\$506,755	\$542,189	\$861,770	6,946	6,282	9,116

¹ Expenditure Induced = Direct X 1.5

² Employment Induced = Direct X 1.0

³ Includes airlines and air travel visitors only.

⁴ Included airlines only.





NORTH DAKOTA PASSENGER SURVEY



Sponsored by:
North Dakota
Aeronautics
Commission

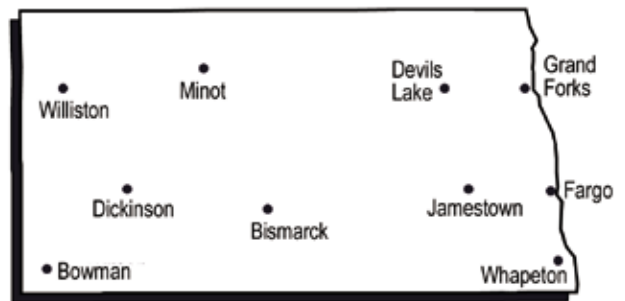
Scheduled airlines now function in an environment that is totally deregulated. Consequently, each community must take an active role to ensure that its air service is adequate. To achieve this objective, we are requesting your participation in this survey. Only information on your flight today and your stay in North Dakota is being requested. **THANK YOU FOR YOUR COOPERATION. Please return or deposit your survey form prior to boarding your flight.**

Please answer the following questions about your flight today:

- From what location did you leave for the airport?
City _____ County _____
State _____ Zip Code _____
If U.S. Military, name of base: _____
- How long did your trip to the airport take?
_____ hours _____ minutes
- On what airline are you about to travel? _____
- What is the primary purpose of your trip?
☐ Business ☐ Personal
☐ Pleasure ☐ Medical
☐ Military Orders ☐ Other, specify: _____
- What is the final air travel destination of your trip today?
City _____ State _____
- How many family members will accompany you on this flight?
No. family members. _____
- Please rate each item from 1 to 5 (1 is unimportant; 5 is very important) in its importance to you in selecting flights.
 - _____ My corporate travel policy
 - _____ Non-stop service
 - _____ My previous experience with the airline
 - _____ On-time performance record
 - _____ My ability to earn miles
 - _____ Price
 - _____ Convenient schedule
 - _____ Type of aircraft
 - _____ Airline Safety record
 - _____ Airport location
 - _____ Ability to purchase tickets on-line
 - _____ Airport security/safety

- For what cities do you have need for additional service from this airport?

	(a) City	(b) Frequency per year
North Dakota:		
U.S.:		
International:		



One study objective is to determine the need for scheduled service within North Dakota. **If you have air travel needs WITHIN North Dakota, please answer the following:**

(c) Desired Travel	(d) Annual Frequency	(e) Maximum Fare You Would be Willing to Pay One Way
_____ city _____ to _____ city		
_____ city _____ to _____ city		
_____ city _____ to _____ city		
_____ city _____ to _____ city		

continued on back...

9. From which of the following did you purchase tickets for this flight?

- ☐ On-line (via the Internet) from the airline directly
- ☐ On-line (via the Internet) from another source
- ☐ From a ticket agent in North Dakota
- ☐ From a ticket agent in another state
- ☐ Directly from the airline
- ☐ I used frequent flyer awards
- ☐ Other: _____

10. Are you a resident of North Dakota? ☐ Yes ☐ No

Thank you once again for your cooperation.

Additional input may be provided to:



North Dakota Aeronautics Commission

P.O. Box 5020

Bismarck, North Dakota 58502

(701) 328-9650

E-mail: ndaero@state.nd.us

**ONLY NON-RESIDENTS OF
THE AREA SHOULD
ANSWER THE
FOLLOWING QUESTIONS.**

1. How many days did you spend in North Dakota during this trip?

_____ days

2. Approximately how much money did you spend on each of the following items during your stay in North Dakota? (If traveling with another individual, please record YOUR expenditures only.)

a. Hotel/motel lodging \$ _____

b. Food and beverages \$ _____

c. Retail stores \$ _____

d. Sports, nightclubs, gambling, and entertainment \$ _____

e. Local transportation including rental car \$ _____

f. Business-related goods and services \$ _____

g. Other \$ _____

3. What major places of business, entertainment, or recreation did you visit during this trip in North Dakota?



2005 North Dakota Air Passenger Survey Tabulation of Results

Questions asked of all respondents:

1. From what city did you leave for the airport?	
Bismarck (N=422)	
Bismarck	63%
Mandan	4%
Dickinson	3%
Minot	3%
New Town	1%
New Salem	1%
Beulah	1%
Sidney	1%
Hazen	1%
Mott	1%
Medora	1%
Killdeer	1%
Kansas City	1%
Jamestown	1%
Garrison	1%
Estevan	1%
McIntosh	1%
60 other cities, each with	under 1%
Devils Lake (N=102)	
Devils Lake	53%
Egeland	3%
Louisville	2%
Fort Totten	2%
Minneapolis	2%
Rugby	2%
Rolla	2%
Cheyenne	2%
Rock Lake	2%
Cando	2%
Munich	2%
27 other cities, each with	1%

Dickinson (N=110)	
Dickinson	66%
Denver	5%
Belfield	5%
Killdeer	3%
Mandan	3%
Bismarck	2%
Glen Ullin	2%
Jamestown	2%
16 other cities, each with	1%
Fargo (N=743)	
Fargo	52%
Detroit Lakes	3%
Moorhead	2%
Grand Forks	2%
Jamestown	1%
116 other cities, each with under	1%
Grand Forks (N=447)	
Grand Forks	69%
East Grand Forks	3%
Grafton	2%
Crookston	1%
Minneapolis	1%
Thief River Falls	1%
Lakota	1%
Roseau	1%
Devils Lake	1%
Langdon	1%
Cavalier	1%
Winnipeg	1%
Red Lake Falls	1%
Stephen	1%
52 other cities, each with under	1%





Appendix B: North Dakota Air Passenger Survey

1. From what city did you leave for the airport? continued

Jamestown (N=106)	
Jamestown	85%
Buchanan	2%
Minneapolis	2%
Carrington	2%
Nortonville	2%
8 other cities, each with	1%
Minot (N=472)	
Minot	63%
Estevan	3%
Williston	3%
Bottineau	2%
Rolla	1%
Garrison	1%
Kenmore	1%
Rugby	1%
Sherwood	1%
South Bend	1%
Belcourt	1%
Charlotte	1%
Minneapolis	1%
Plentywood	1%
Glenburn	1%
Rolette	1%
Towner	1%
Virden	1%
Westhope	1%
Crosby	1%
Springfield	1%
66 other cities, each with under	1%

Williston (N=37)

Williston	65%
Wolf Point	5%
Watford City	5%
Portal	5%
Sidney	5%
Stanley	5%
Plentywood	3%
Bainville	3%
Denver	3%

2. How long did your trip to the airport take?

City	Average Minutes
Bismarck (N=416)	56
Devils Lake (N=109)	58
Dickinson (N=106)	46
Fargo (N=772)	46
Grand Forks (N=447)	42
Jamestown (N=104)	20
Minot (N=468)	51
Williston (N=37)	37
Average for all cities	47

DEPARTURES					
FLIGHT	SCHEDULED DEPARTURE	WILL DEPART	GATE	DEPARTING FOR	
2729	6:35	ON TIME	1A	MINNEAPOLIS / ST. PAUL	
3278	1:11	ON TIME	1A	MINNEAPOLIS / ST. PAUL	
ARRIVALS					
FLIGHT	SCHEDULED ARRIVAL	WILL ARRIVE	GATE	ARRIVING FROM	
3279	12:50	ON TIME	1B	MINNEAPOLIS / ST. PAUL	
2728	11:35	ON TIME	1B	MINNEAPOLIS / ST. PAUL	
COUNTER HOURS: FROM: 5:20 - 3:00 SUN 9:30 - 2:00					
FOR RESERVATIONS AND INFORMATION CALL: 1-800-225-2525					





Appendix B: North Dakota Air Passenger Survey

3. On what airline are you about to travel?

	Bismarck N=404	Devils Lake N=109	Dickinson N=108	Fargo N=746	Grand Forks N=424	Jamestown N=99	Minot N=452	Williston N=36
Air Transport			3%					
Air WI			1%					
Great Lakes			79%					78%
Mesaba		15%			2%	30%		
Northwest	67%	84%	1%	55%	97%	70%	99%	2%
United Express	27%	1%	15%	46%				14%
Other	5%		2%		1%			6%

4. What is the primary purpose of your trip?

	Bismarck N=422	Devils Lake N=116	Dickinson N=108	Fargo N=744	Grand Forks N=449	Jamestown N=105	Minot N=475	Williston N=37
Business	50%	37%	46%	46%	36%	36%	51%	65%
Pleasure	31%	23%	32%	30%	36%	40%	25%	19%
Military Orders	0%	24%	0%	4%	1%	1%	3%	0%
Personal	19%	14%	23%	20%	27%	25%	21%	22%
Medical	1%	2%	0%	1%	2%	3%	1%	3%
Other	3%	3%	2%	1%	3%	4%	4%	3%





Appendix B: North Dakota Air Passenger Survey

5. What is the final air travel destination for your trip today?

Bismarck (N=426)

Minneapolis	7%
Las Vegas	5%
Denver	5%
Chicago	4%
Washington, D.C.	4%
Indianapolis	3%
Dallas	3%
Kansas City	3%
Seattle	3%
Colorado Springs	2%
Baltimore	2%
San Francisco	2%
Phoenix	2%
New York	2%
Portland	2%
San Diego	2%
Omaha	2%
110 other cities, each with	1% or less



Devils Lake (N=115)

Minneapolis	16%
Devils Lake	14%
Milwaukee	5%
Phoenix	4%
Portland	4%
Louisville	4%
Los Angeles	3%
Las Vegas	3%
Sacramento	3%
Oklahoma City	3%
San Jose	2%
San Antonio	2%
San Diego	2%
Washington	2%
Anchorage	2%
Buffalo	2%
Chico	2%
Eureka	2%
Denver	2%
Boise	2%
Ontario	2%
7 other cities, each with	1%

Dickinson (N=110)

Denver	49%
Seattle	6%
San Diego	4%
Los Angeles	3%
Phoenix	3%
Dallas	3%
Chicago	3%
Houston	2%
Ft. Lauderdale	2%
Oklahoma City	2%
22 other cities, each with	1%





Appendix B: North Dakota Air Passenger Survey

5. What is the final air travel destination for your trip today?

Fargo (N=765)

Chicago	8%
Denver	8%
Phoenix	4%
Seattle	4%
San Diego	3%
Portland	3%
Washington	2%
Atlanta	2%
Indianapolis	2%
Minneapolis	2%
San Francisco	2%
Reno	2%
San Jose	2%
143 other cities, each with	1% or less

Grand Forks (N=448)

Minneapolis	9%
Phoenix	5%
Washington, D.C.	4%
Denver	4%
Chicago	3%
Seattle	3%
Las Vegas	3%
Baltimore	3%
Portland	3%
Atlanta	3%
Philadelphia	2%
Dallas	2%
Los Angeles	2%
New York	2%
Indianapolis	2%
Detroit	2%
Dayton	2%
San Francisco	2%
Milwaukee	2%
San Diego	2%
105 other cities, each with	1% or less

Jamestown (N=105)

Minneapolis	13%
Dallas	11%
Seattle	6%
Phoenix	6%
Las Vegas	6%
Orlando	4%
Atlanta	4%
Denver	3%
Salt Lake City	3%
St. Louis	3%
Washington, D.C.	3%
Louisville	2%
Little Rock	2%
Milwaukee	2%
Houston	2%
Kansas City	2%
Norfolk	2%
30 other cities, each with	1% or less





Appendix B: North Dakota Air Passenger Survey

5. What is the final air travel destination for your trip today?

Minot (N=474)

South Bend	5%
Minneapolis	5%
Tampa	4%
Detroit	4%
Portland	3%
Baltimore	3%
Phoenix	3%
Honolulu	3%
Cincinnati	2%
Chicago	2%
Kansas City	2%
Charlotte	2%
Lansing	2%
Los Angeles	2%
Dallas	2%
Washington, D.C.	2%
Denver	2%
Las Vegas	2%
Springfield	2%
Richmond	2%
104 other cities, each with	1% or less

Williston (N=37)

Denver	37%
Kansas City	5%
Los Angeles	5%
Houston	5%
Sacramento	5%
Newark	3%
Sioux Falls	3%
Seattle	3%
San Diego	3%
Salt Lake City	3%





Appendix B: North Dakota Air Passenger Survey

6. Number of people on this trip:

	Bismarck N=381	Devils Lake N=107	Dickinson N=92	Fargo N=762	Grand Forks N=411	Jamestown N=93	Minot N=436	Williston N=36
1	64%	83%	69%	74%	63%	69%	64%	78%
2	20%	11%	3%	17%	23%	19%	8%	11%
3	11%	3%	12%	6%	10%	7%	12%	8%
4	4%	2%	4%	2%	3%	4%	4%	3%
5	1%	1%	1%	1%	1%	1%	1%	0%
6	1%	0%	1%	0%	0%	0%	1%	0%
Average	1.62%	1.26	1.6%	1.42%	1.61	1.49	1.68%	1.36%

7. Importance of selection factors (1 = unimportant, 5 = very important):

	Bismarck N=375	Devils Lake N=100	Dickinson N=100	Fargo N=675	Grand Forks N=395	Jamestown N=90	Minot N=400	Williston N=35
Corporate travel policy	2.3	2.6	2.2	2.4	2.1	2.0	2.4	2.3
Non-stop services	3.6	3.7	4.0	3.6	3.6	3.5	3.6	3.8
Previous experience with the airline	3.8	3.7	3.6	3.7	3.7	3.6	3.7	3.7
On-time performance record	4.0	4.1	4.0	3.9	3.9	4.0	3.9	4.0
Ability to earn miles	3.4	3.4	2.8	3.5	3.5	3.4	3.1	2.9
Price	4.1	4.0	4.2	4.0	4.2	3.9	4.0	4.2
Convenient schedule	4.3	4.2	4.3	4.1	4.2	4.3	4.0	4.3
Type of aircraft	3.1	3.2	3.1	3.0	3.1	3.0	3.1	3.3
Airline safety record	4.0	4.1	3.9	3.9	4.0	4.1	4.0	4.5
Airport location	3.7	4.1	4.1	3.8	3.8	4.2	3.8	4.1
Ability to purchase tickets on-line	3.7	3.5	3.3	3.6	3.6	3.5	3.7	3.9
Airline security/safety	3.9	4.0	3.6	3.9	3.8	4.0	4.0	4.4





Appendix B: North Dakota Air Passenger Survey

8. Cities where more service is desired:	
Bismarck:	Respondents
Atlanta	2
Billings	3
Chicago	11
Denver	6
Detroit	3
Dickinson	10
Fargo	21
Grand Forks	8
Minneapolis	16
Minot	9
Phoenix	5
Williston	4
Devils Lake:	Respondents
Bismarck	7
Grand Forks	7
Minneapolis	4
Washington	3
Dickinson:	Respondents
Bismarck	6
Denver	10
Fargo	5
Grand Forks	3
Minneapolis	6
Fargo:	Respondents
Bismarck	17
Chicago	17
Denver	23
Fargo	17
Grand Forks	8
Las Vegas	7
Minneapolis	22
Minot	9
Phoenix	29

Grand Forks:	Respondents
Atlanta	5
Bismarck	17
Chicago	8
Denver	7
Fargo	10
Minneapolis	27
Minot	7
Phoenix	5
Jamestown:	Respondents
Fargo	4
Minneapolis	7
Phoenix	3
Minot:	Respondents
Bismarck	5
Denver	14
Fargo	12
Las Vegas	5
Minneapolis	23
Phoenix	6
Williston	9
Williston:	Respondents
Bismarck	4





Appendix B: North Dakota Air Passenger Survey

9. Air travel needs only within the state of North Dakota (city connections mentioned more than once are noted):

Bismarck to:	Respondents
Fargo	25
Grand Forks	16
Minot	4
Devils Lake to:	Respondents
Bismarck	4
Dickinson to:	Respondents
Bismarck	3
Fargo	5
Grand Forks	3
Fargo to:	Respondents
Bismarck	20
Minot	9
Williston	7
Grand Forks to:	Respondents
Bismarck	20
Fargo	6
Minot	5
Jamestown to:	Respondents
Fargo	2
Minot to:	Respondents
Bismarck	5
Fargo	13
Grand Forks	5
Minneapolis	2
Williston to:	Respondents
Bismarck	8
Minot	3





Appendix B: North Dakota Air Passenger Survey

10. How tickets were purchased:

	Bismarck N=400	Devils Lake N=100	Dickinson N=104	Fargo N=718	Grand Forks N=423	Jamestown N=97	Minot N=409	Williston N=37
On-line directly from the airline	35%	30%	23%	32%	45%	28%	34%	24%
On-line from another source	21%	12%	16%	23%	14%	18%	20%	38%
Ticket agent in North Dakota	10%	5%	14%	8%	10%	26%	6%	5%
Ticket agent in another state	16%	16%	19%	17%	13%	13%	22%	14%
Directly from the airline	10%	11%	22%	8%	9%	14%	10%	8%
Frequent flyer awards	5%	2%	2%	6%	8%	6%	3%	0%
Other	7%	27%	6%	7%	7%	4%	8%	4%





Appendix B: North Dakota Air Passenger Survey

Questions asked only of non-residents:

1. Number of days spent in North Dakota:								
	Bismarck N=214	Devils Lake N=58	Dickinson N=58	Fargo N=308	Grand Forks N=218	Jamestown N=49	Minot N=293	Williston N=23
Average Days	5.6	13.7	6.4	5.3	6.8	23.7	7.1	3.7

2. Approximately how much did you spend during your stay in North Dakota?								
	Bismarck N=205	Devils Lake N=44	Dickinson N=57	Fargo N=300	Grand Forks N=211	Jamestown N=44	Minot N=283	Williston N=23
Average Spent	\$641	\$598	\$710	\$675	\$596	\$612	\$898	\$365

3. Places visited while in the city you visited: (NOTE: Single mentions are not noted, nor are names of individual stores, such as K-Mart.)	
Bismarck:	Respondents
Medora	17
Malls (all)	12
Ft. Lincoln	9
Casinos (all)	2
Devils Lake:	Respondents
Casinos (all)	9
Ft. Totten	3
Camp Grafton	3
Dickinson:	Respondents
Medora	11
TR Nat'l. Park	5
Golf courses (all)	4
Malls	2
Fargo:	Respondents
Malls (all)	17
NDSU	8
Casinos (all)	6
Golf courses (all)	5
Concordia	5
Baseball games	4
Bobcat	4
Fargo Dome	2
UND	2

Grand Forks:	Respondents
UND	54
Malls (all)	15
Alerus Center	13
Engelstad Arena	6
Jamestown:	Respondents
Lakes	2
Buchanan	2
Minot:	Respondents
FMCA convention	46
State Fairgrounds	29
Malls	24
Peace Gardens	10
Golf courses (all)	7
NOTE: FMCA (RV) convention held at State Fairgrounds	
Williston:	Respondents
None noted by more than 1 person	





Appendix C: GA Community Wide Impacts

**Table C-1 Community Wide Impacts
2004 GA Airport Community Wide Summary
(82 GA Airports)**

Airport	Airport Info		Expenditures					Jobs	
	# of Planes	# of Ops	Direct Capital Improvements	Direct Payroll/ Operating Expenses	Air Travel Visitors	Total Direct Expenditures	Total Expenditures	Direct Jobs	Jobs Total (2X)
Arthur	4	310	\$0	\$500	\$4,764	\$5,264	\$13,160	0	0
Ashley	3	1,000	\$12,448	\$313,459	\$30,319	\$356,226	\$890,565	4	8
Beach	6	1,660	\$262,400	\$35,000	\$19,924	\$317,324	\$793,310	1	2
Beulah	11	1,500	\$74,180	\$891,645	\$30,319	\$996,144	\$2,490,360	27	54
Bottineau	16	4,000	\$22,101	\$79,650	\$95,288	\$197,039	\$492,598	3	6
Bowbells	2	506	\$0	\$0	\$4,764	\$4,764	\$11,910	0	0
Bowman	13	2,310	\$125,600	\$221,450	\$47,644	\$394,694	\$986,735	3	6
Cando	5	3,500	\$306,000	\$427,043	\$41,147	\$774,190	\$1,935,475	1	2
Carrington	10	2,000	\$71,600	\$674,035	\$43,313	\$788,948	\$1,972,370	4	8
Casselton	52	12,560	\$182,132	\$641,693	\$199,238	\$1,023,063	\$2,557,658	32	64
Cavalier	15	3,292	\$42,761	\$1,287,129	\$20,444	\$1,350,334	\$3,375,835	12	24
Columbus	0	10	\$400	\$500	\$788	\$1,688	\$4,220	0	0
Cooperstown	16	4,100	\$144,500	\$815,504	\$47,644	\$1,007,648	\$2,519,120	6	12
Crosby	11	1,620	\$35,456	\$236,095	\$17,325	\$288,876	\$722,190	3	6
Drayton	2	600	\$3,600	\$543,328	\$9,525	\$556,453	\$1,391,133	4	8
Edgeley	5	1,630	\$222,400	\$530,508	\$9,525	\$762,433	\$1,906,083	12 ¹	24
Elgin	2	50	\$2,000	\$1,188	\$3,188	\$6,376	\$15,940	0	0
Ellendale	5	1,260	\$22,100	\$186,142	\$15,593	\$223,835	\$559,588	4	8
Enderlin	8	2,440	\$37,413	\$62,700	\$14,726	\$114,839	\$287,098	3	6
Fessenden	1	710	\$7,315	\$344,176	\$12,491	\$363,982	\$909,955	2	4
Fort Yates	0	200	\$30,400	\$2,000	\$8,633	\$41,033	\$102,583	0	0
Gackle	0	20	\$100	\$500	\$788	\$1,388	\$3,470	0	0
Garrison	12	2,780	\$13,000	\$20,000	\$64,103	\$97,103	\$242,758	0	0
Garrison Dam	0	60	\$2,200	\$3,000	\$2,625	\$7,825	\$19,563	0	0
Glen Ullin	7	1,000	\$400,000	\$10,000	\$21,656	\$431,656	\$1,079,140	0	0
Grafton	20	5,190	\$66,116	\$1,509,000	\$143,062	\$1,718,178	\$4,295,445	15	30
Grenora	0	10	\$100	\$1,000	\$525	\$1,625	\$4,063	0	0
Gwinner	8	400	\$51,600	\$87,765	\$138,600	\$277,212	\$694,913	1	2
Harvey	7	1,150	\$0	\$846,087	\$28,125	\$874,212	\$2,185,530	7	14
Hazen	2	600	\$26,318	\$126,216	\$21,656	\$174,190	\$435,475	4	8
Hazelton	0	236	\$2,000	\$1,000	\$8,922	\$11,922	\$29,805	0	0
Hettinger	18	2,230	\$193,372	\$1,318,316	\$34,650	\$1,546,338	\$3,865,845	26 ¹	52
Hillsboro	21	3,650	\$55,000	\$1,314,396	\$51,975	\$1,421,371	\$3,553,428	14	28





Appendix C: GA Community Wide Impacts

Table C-1 Community Wide Impacts
GA Airport Community Wide Summary continued
(82 GA Airports)

Airport Info		Expenditures						Jobs	
Airport	# of Planes	# of Ops	Direct Capital Improvements	Direct Payroll/ Operating Expenses	Air Travel Visitors	Total Direct Expenditures	Total Expenditures	Direct Jobs	Jobs Total (2X)
Kenmare	17	2,400	\$40,200	\$695,237	\$51,975	\$787,412	\$1,968,530	8	16
Killdeer	2	210	\$0	\$3,490,826	\$4,725	\$3,495,551	\$8,738,878	86 ¹	172
Kindred	40	5,000	\$492,800	\$538,728	\$86,625	\$1,118,153	\$2,795,383	15	30
Kulm	2	40	\$20,000	\$6,000	\$866	\$26,866	\$67,165	0	0
Lakota	8	3,500	\$126,244	\$6,259	\$69,733	\$202,236	\$505,590	0	0
LaMoure	10	2,200	\$10,000	\$813,200	\$19,350	\$842,550	\$2,106,375	8	16
Langdon	12	2,000	\$191,200	\$240,000	\$34,650	\$465,850	\$1,164,625	8	16
Larimore	21	7,000	\$11,280	\$1,078,537	\$216,996	\$1,306,813	\$3,267,033	14	28
Leeds	8	1,620	\$5,760	\$28,000	\$27,720	\$61,480	\$153,700	1	2
Lidgerwood	0	350	\$50	\$600	\$12,944	\$13,594	\$33,985	0	0
Linton	17	1,800	\$54,400	\$75,084	\$25,988	\$155,472	\$388,680	2	4
Lisbon	10	1,856	\$65,000	\$585,795	\$28,153	\$678,948	\$1,697,370	5	10
Maddock	10	2,210	\$42,800	\$466,681	\$26,421	\$535,902	\$1,339,755	5	10
Mandan	32	8,100	\$82,600	\$275,000	\$142,931	\$500,531	\$1,251,238	10	20
Mayville	6	6,520	\$26,000	\$1,300,947	\$220,894	\$1,547,841	\$3,869,603	8	16
McClusky	1	200	\$0	\$3,500	\$4,725	\$8,225	\$20,563	0	0
McVile	2	510	\$750	\$1,000	\$9,096	\$10,846	\$27,115	0	0
Milnor	1	200	\$2,360	\$1,500	\$3,552	\$7,412	\$18,530	2	4
Minto	5	1,800	\$14,400	\$152,000	\$17,325	\$183,725	\$459,313	5	10
Mohall	5	844	\$0	\$428,322	\$5,198	\$433,520	\$1,083,800	5	10
Mott	7	1,150	\$43,080	\$316,589	\$18,624	\$378,293	\$945,733	3	6
Napoleon	2	280	\$3,400	\$3,000	\$9,096	\$15,496	\$38,740	0	0
New Rockford	4	1,360	\$0	\$283,000	\$15,592	\$298,592	\$746,480	2	4
New Town	5	700	\$5,000	\$5,481,785	\$12,994	\$5,499,779	\$13,749,448	135 ¹	270
Northwood	11	6,310	\$76,000	\$390,000	\$177,581	\$643,581	\$1,608,953	14	28
Oakes	11	1,610	\$21,840	\$710,500	\$17,325	\$749,665	\$1,874,163	5	10
Page	13	3,500	\$17,000	\$1,070,853	\$96,250	\$1,184,103	\$2,960,258	10	20
Park River	6	4,200	\$12,600	\$585,000	\$51,975	\$649,575	\$1,623,938	7	14
Parshall	8	760	\$87,500	\$175,275	\$10,828	\$273,603	\$684,008	3	6
Peace Garden	0	300	\$26,000	\$4,000	\$12,944	\$42,944	\$107,360	0	0
Pembina	9	1,384	\$22,400	\$93,085	\$22,696	\$138,181	\$345,453	3	6
Plaza	0	20	\$50	\$500	\$866	\$1,416	\$3,540	0	0
Richardton	0	10	\$0	\$1,790	\$953	\$2,743	\$6,858	0	0





Appendix C: GA Community Wide Impacts

Table C-1 Community Wide Impacts
GA Airport Community Wide Summary continued
(82 GA Airports)

Airport Info		Expenditures						Jobs	
Airport	# of Planes	# of Ops	Direct Capital Improvements	Direct Payroll/ Operating Expenses	Air Travel Visitors	Total Direct Expenditures	Total Expenditures	Direct Jobs	Jobs Total (2X)
Rolette	2	430	\$7,400	\$2,000	\$9,962	\$19,362	\$48,405	0	0
Rolla	8	2,000	\$44,800	\$1,404,353	\$43,313	\$1,492,466	\$3,731,165	10	20
Rugby	12	200	\$61,440	\$766,835	\$34,650	\$862,925	\$2,157,313	4	8
Stanley	15	1,000	\$18,400	\$449,850	\$25,988	\$494,238	\$1,235,595	6	12
St. Thomas	6	1,300	\$63,040	\$431,645	\$13,427	\$508,112	\$1,270,280	4	8
Tioga	53	9,250	\$36,000	\$1,159,612	\$168,919	\$1,364,531	\$3,411,328	16	32
Towner	5	920	\$0	\$90,000	\$13,860	\$103,860	\$259,650	3	6
Turtle Lake	3	800	\$400	\$0	\$13,427	\$13,827	\$34,568	0	0
Valley City	38	4,650	\$80,400	\$282,707	\$86,625	\$449,732	\$1,124,330	6	12
Wahpeton	30	10,840	\$350,000	\$1,062,036	\$207,900	\$1,619,936	\$4,049,840	14	28
Walhalla	6	1,300	\$24,440	\$146,972	\$21,656	\$193,068	\$482,670	2	4
Washburn	7	1,270	\$280,616	\$192,791	\$13,860	\$487,267	\$1,218,168	3	6
Watford City	12	2,300	\$77,800	\$460,707	\$47,644	\$586,151	\$1,465,378	5	10
West Fargo	36	8,300	\$60,000	\$1,127,864	\$138,600	\$1,326,464	\$3,316,160	25 ¹	50
Westhope	5	420	\$30,800	\$2,000	\$9,096	\$41,896	\$104,740	0	0
Wishek	4	830	\$0	\$6,000	\$22,956	\$28,956	\$72,390	0	0
Totals (82)	809	178,428	\$5,050,862	\$39,418,990	\$3,522,763	\$47,992,615	\$119,981,538	650	1,300

¹ Local aviation/aerospace manufacturing at Edgely, Hettinger, Killdeer, New Town, West Fargo, Wahpeton and Kindred.

General Assumptions - Statewide Overview

- For every based airplane, generally one direct aviation job at a general aviation airport is generated.
- For every based airplane, generally \$150,000 of total economic expenditures (annually) occurs in the community.
- For every one airport operation, approximately \$700 is generated in total aviation expenditures.
- For every based aircraft, about \$6,200 of airport direct capital improvements (such as grants for safety, lighting and pavements) is generated.
- At the 82 general aviation airports, the air travel visitor average total expenditure is \$43,000 per airport (for things such as food and hotels).
- For every \$5 of capital improvement dollars spent at an airport, the total airport expenditure multiplies 25 times.

